

1986
PENDER COUNTY
LAND USE PLAN

COASTAL ZONE
INFORMATION CENTER

Assistance by
TALBERT , COX & ASSOCIATES INC.

HD
211
.N8
P46
1987

LOCAL ADOPTION - MAY 27, 1987

CRC CERTIFICATION - JUNE 5, 1987

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Prepared By

PENDER COUNTY PLANNING BOARD

and

PENDER COUNTY BOARD OF COMMISSIONERS

Assistance By

TALBERT, COX & ASSOCIATES, INC.

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for Pender County

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DATA COLLECTION AND ANALYSIS

PENDER COUNTY LAND USE PLAN

A. Information Base

The 1986 Land Use Plan Update for Pender County has been prepared in accordance with requirements of the North Carolina Coastal Area Management Act (CAMA). Specifically, this document complies with Subchapter 7B, "Land Use Planning Guidelines," of the North Carolina Administrative Code, as amended, July , 1984.

The initial Land Use Plan was prepared for Pender County in 1976, and the first update in 1981. According to the Land Use Planning Guidelines, the major purpose of periodic updating of local land use plans is to identify and analyze newly emerging community issues and problems. An additional element which was not required in either the 1976 Plan or the 1981 Update is a "Storm Hazard Mitigation, Post-Disaster Recovery, and Hurricane Evacuation Plan," and is required to be included in the 1986 Update. This element is designed to help local governments coordinate effective policies and actions relating to the impact of hurricanes or other severe storms.

The guidelines further give the following objectives the update should meet:

- to further define and refine local policies and issues;
- to further examine and refine the land classification system and the land classification map;
- to assess the effectiveness of the existing land use plan and its implementation;
- to further explore implementation procedures, and;
- to promote a better understanding of the land use planning process.

Both the 1976 Land Use Plan and the 1981 Update provided much of the needed information base for this update. However, in many cases, new information had to be developed or has become available since the 1981 Plan was completed. A number of data sources were used during the preparation of this plan to prepare updated analyses of population, housing, economics, (including agriculture, fisheries, and forestry), and existing land uses. Most of the data came from primary and secondary sources in the form of direct contacts with representatives of various state and federal agencies and/or previously published documents or reports. Also, "windshield" surveys were conducted to obtain data on existing land use patterns. Interviews were conducted with various County officials, and extensive effort was made before beginning the planning process to obtain citizen input on issues of local concern.

B. Present Conditions

1. Present Population and Economy

The most current population information for Pender County is the 1980 Census data and the North Carolina Office of State Budget and Management estimates for 1985. As shown in the 1981 Land Use Plan, Pender County had the following population in 1980 based on Census information.

Table 1: Pender County Population Growth

	<u>Population</u>	<u>% Increase, 70-80</u>
1960	18,508	
1970	18,149	
1980	22,107	+21.8
*1985	24,114	+ 9.1 (5 years estimated)

Source: 1980 U.S. Bureau of the Census

*July 1, 1985 N.C. Office of State Budget and Management

As shown on Table 1, Pender County continues to experience a steady rate of growth based on 1985 population projections, and this trend will most likely continue.

Table 2 below reflects population changes by township for 1960, 1970, and 1980.

Table 2: Changes to Population by Township

<u>Township</u>	<u>1960</u>	<u>1970</u>	<u>1980</u>	<u>% Change 1970-80</u>	<u>Ranking of Growth Rate</u>
Burgaw	4,135	4,422	4,940	+11.7	8
Canetuck	466	256	330	+28.9	3
Caswell	1,171	1,023	996	- 2.6	
Columbia	1,691	1,542	1,740	+12.8	7
Grady	1,148	1,264	1,360	+ 7.6	9
Holly	1,579	1,373	1,684	+22.7	4
Long Creek	1,045	886	1,158	+30.7	2
Rocky Point	1,728	1,616	1,941	+20.1	5
Topsail	2,431	2,860	4,515	+57.9	1
Union	3,114	2,907	3,443	+18.4	6
TOTALS	18,508	18,149	22,107	+21.8	

Source: U.S. Census

Table 2 shows that Topsail, Long Creek, Canetuck, Holly, and Rocky Point Townships have experienced the largest increases in population between 1970 and 1980. All of these areas continue to

TABLE 3
PENDER COUNTY, NORTH CAROLINA
% OF URBAN AND RURAL POPULATION

	<u>1950</u>	<u>1960</u>	<u>1970</u>	<u>1980</u>
Urban	-	-	-	.9
Rural	100.0	100.0	100.0	99.1

Source: State Government Statistical Abstract, Fifth Edition,
1984, North Carolina

TABLE 4
PENDER COUNTY, NORTH CAROLINA
POPULATION DENSITY AND LAND AREA

	<u>1960</u>	<u>1970</u>	<u>1980</u>	<u>1983*</u>
Land Area in Square Miles				
875	22	21	21	26.7

Source: State Government Statistical Abstract, Fifth Edition,
1984, North Carolina; *September 1984 Profile of North
Carolina Counties

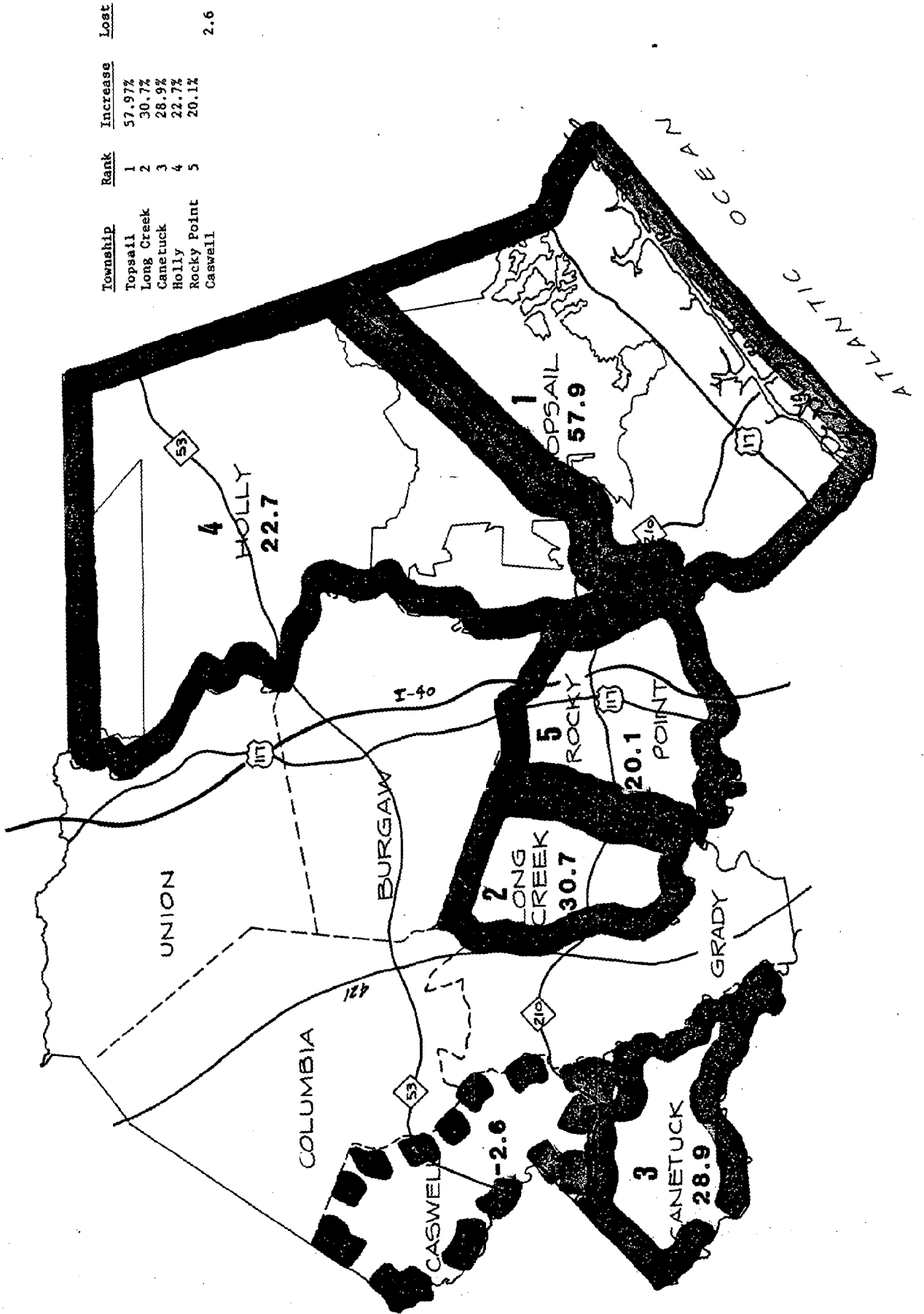
TABLE 5
PENDER COUNTY, NORTH CAROLINA
NUMBER OF HOUSEHOLDS AND PERSONS PER HOUSEHOLD

	<u>1960</u>	<u>1970</u>	<u>1980</u>
Number of Households	4,613	5,237	7,511
Persons Per Household	3.99	3.42	2.91

Source: State Government Statistical Abstract, Fifth Edition,
1984, North Carolina

TOWNSHIP MAP

POPULATION INCREASE 1970-1980



grow in population. The significant population growth in Topsail Township, 57.9% between 1970 and 1980, has continued since 1980 due to the very attractive developments along and adjacent to the Intercoastal Waterway and within a relatively short drive to Wilmington for urban services, such as shopping, entertainment, etc. Large developments, such as Scotts Hill, Washington Acres, Olde Point, Belvedere Plantation, and Deerfield, which have many undeveloped parcels remaining, will most likely ensure that this portion of the County will continue to grow. In addition to these developments, new areas that have recently opened between U.S. 17 and the Intercoastal Waterway, such as Bay Harbour, Virginia Creek Forest, Gabes Point, Deer Run, Topsail Green, Cedar Landing, and others, will provide additional single family lots for development.

The Long Creek Township has experienced a 30.7% increase in population between 1970 and 1980, with the Canetuck Township experiencing a 28.9% increase in population for the same period. Much of this development is most likely attributable to ease of access to the County's major thoroughfare system and good access to waterfront areas, such as the Cape Fear River, Black River, and Long Creek. Assuming continued interest in waterfront access, these areas will most likely continue to experience increases in population.

The Rocky Point Township, between 1970 and 1980, experienced the fourth largest increase in population. Again, this area has good access to both U.S. 117 and N.C. 210 and, additionally, access to the recently opened I-40. Since 1980, this area has continued to grow with many mobile home developments being located in this part of the County.

The Caswell Township is the only area of the County that has lost population between 1970 and 1980. This 2.6% loss may be due, in part, to the lack of good road access north and south and the need to travel a fairly substantial distance to reach points, such as Burgaw or Wilmington, to the south. This area has been, and continues to be, very rural in character, other than the small Town of Atkinson.

The township map, on the previous page, reflects the location of the five townships with the largest increase in population between 1970-1980, and the one township that has lost population during that period.

Tables 3, 4, and 5 reflect how the County, in 1980, began in a very small way to shift from a totally rural County to one with a very small percentage in the urban classification. Also, as reflected in Table 4, the population density in 1970 was 21 people per square mile and 26.7 people per square mile in 1983. Although the population density is increasing, it is still very rural and considered a very low population density. Specifically, the 1984 Profile of North Carolina Counties ranked Pender County the 94th county in population density, while New Hanover County was ranked

TABLE 6
 PENDER COUNTY, NORTH CAROLINA
 EMPLOYMENT OF PERSONS 16 YEARS OLD OR OLDER
 BY INDUSTRY, 1980

2,229	Manufacturing
1,503	Wholesale and Retail Trade
881	Construction
768	Educational Services
669	Agriculture, Forestry, Fishing and Mining
660	Transportation, Communications, and Other Public Utilities
536	Health Services
492	Public Administration
467	Finance, Insurance, Real Estate, Business, and Repair Services
360	Personal, Entertainment and Recreational Services
129	Other Professional and Related Services

Source: Profile of North Carolina

the 3rd highest density county in the State, with a 1983 density of 589.7 people per square mile. As discussed earlier, because of Wilmington's expanding economy, ease of access to Wilmington by way of I-40, 421 and U.S. 17, and the availability of subdivisions in a more rural setting, people have been and will probably continue to establish residence in Pender County.

Table 5 shows a substantial increase in the number of households established between 1970 and 1980, while at the same time, the number of persons per household is dropping. Specifically, during this 10-year period, 2,274 new households were established in the County.

Both the 1976 and 1981 Land Use Plans discussed the fact that Pender County's economy was based on agriculture and natural resources, such as fishing, but the economy was experiencing diversification at that time. This diversification of the economy has continued, as shown in the following tables.

TABLE 7
PENDER COUNTY, NORTH CAROLINA
RETAIL SALES 1980 - 1985

	<u>1980-81</u>	<u>1981-82</u>	<u>1982-83</u>	<u>1983-84</u>	<u>1984-85</u>
Total Gross Retail Sales	\$60,126,633	\$61,540,329	\$62,300,077	\$73,958,036	\$82,985,244
Food	14,814,535	15,784,930	15,795,344	18,361,369	22,303,360
General Merchandise	15,685,796	18,441,205	17,585,010	21,171,629	22,135,952
Autos	12,474,829	11,347,716	12,296,757	11,932,701	10,268,369
Building Material	6,045,486	5,722,100	5,194,334	5,628,897	7,329,157
Apparel, Furniture	11,105,987	10,244,378	11,428,632	16,863,440	20,948,406
Unclassified Retail Sales					

Source: Patty Chubb, North Carolina Department of Revenue

TABLE 8
PENDER COUNTY, NORTH CAROLINA
ACRES OF HARVESTED CROP LAND
AND ESTIMATED FARM INCOME

	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
Acres of Harvested Crop Land	52,500	57,000	51,800	44,100	46,900
Estimated Farm Income	36,473,000	31,787,000	28,959,000	26,130,000	28,069,000

Source: September, 1984, Profile, North Carolina Counties 49-82

Table 6 shows that in 1980, over 4,613 jobs in the County were in manufacturing, wholesale and retail trades, and construction, with manufacturing leading with 2,229 jobs. This table also shows that 669 jobs were in agriculture, forestry, fishing, or mining, with other job opportunities showing a lesser amount. Retail sales in the County have continued to increase, as shown in Table 7. Of particular interest is the sharp increase in retail sales since 1980, specifically, from \$60,126,633 in 1980 to \$82,985,244 in 1985, which represents a 38% increase in that five-year period. Much of that increase can be attributed to the continued growth at the beach, Hampstead, and along major thoroughfares, and the increase of tourist dollars being spent in the local economy.

As shown in Table 8, agriculture continues to be a major economic factor in Pender County, although fewer acres are being harvested each year and less revenue is being generated by farm operations. Specifically, in 1980, 52,500 acres harvested generated a farm income of \$36,473,000, while in 1984, 46,900 acres harvested generated \$28,069,000, which represents 5,600 fewer acres harvested with \$8,404,000 fewer dollars of estimated farm income. Although the dollar amount has gone down, agriculture is still a very important part of the Pender County economy.

TABLE 9
FISHING INDUSTRY IN PENDER COUNTY
POUNDS CAUGHT/VALUE

1981			1982		
<u>SPECIES</u>	<u>POUNDS</u>	<u>VALUE</u>	<u>SPECIES</u>	<u>POUNDS</u>	<u>VALUE</u>
Bluefish	34,343	\$ 5,210	Bluefish	54,811	\$11,467
Croaker	38,851	17,724	Croaker	38,726	21,244
Flounders, Fluke,	21,327	16,492	Drum, Red	1,118	252
Unclassified			Flounders, Fluke,	35,270	26,574
Groupers	27,610	24,822	Unclassified		
Harvestfish	1,586	286	Groupers	29,479	23,534
King Mackerel	7,547	6,668	Grunts	1,265	437
King Whiting	57,919	20,472	Harvestfish	3,313	817
Mullet	50,222	11,668	King Mackerel	12,848	12,033
Scups or Porgies	28,670	15,323	King Whiting	17,336	6,563
Sea Basses, Unclassified	24,489	19,441	Mullet	79,354	15,736
Sea Trout, Grey	70,131	22,742	Pigfish	1,457	286
Snappers	49,642	95,397	Scups or Porgies	36,101	25,981
Spanish Mackerel	2,756	1,102	Sea Basses, Unclassified	25,685	20,268
Spot	32,725	9,050	Sea Trout, Grey	70,301	30,113
Tilefish	1,045	888	Snappers	21,903	38,712
Triggerfishes	582	146	Spanish Mackerel	2,388	836
Crab, Blue, Hard	100,264	21,162	Spot	39,357	11,765
Crab, Blue, Soft	1,005	1,759	Tilefish	3,692	1,908
Shrimp (heads on)	83,012	185,521	Crab, Blue, Hard	239,733	37,881
Clams, Hard (meats)	33,149	119,358	Crab, Blue, Soft	3,333	6,666
Oyster (meats)	17,669	27,671	Shrimp (heads on)	252,580	553,806
			Clams, Hard (meats)	55,095	185,267
			Oysters (meats)	21,124	37,276
COUNTY TOTAL	684,544	\$622,902	COUNTY TOTAL	1,046,269	\$1,069,422

TABLE 9
(Continued)

FISHING INDUSTRY IN PENDER COUNTY

POUNDS CAUGHT/VALUE

1983			1984		
<u>SPECIES</u>	<u>POUNDS</u>	<u>VALUE</u>	<u>SPECIES</u>	<u>POUNDS</u>	<u>VALUE</u>
Bluefish	56,371	\$ 9,907	Bluefish	32,892	\$ 5,412
Croaker	47,205	20,517	Butterfishes	1,826	512
Drum Red	8,508	1,682	Croaker	81,203	34,968
Flounders, Fluke,	44,236	34,774	Drum, Red	12,987	3,644
Unclassified			Flounders, Fluke,	37,671	30,079
King Whiting	35,834	13,711	Unclassified		
Mullet	54,889	12,321	Harvestfish	599	151
Pigfish	3,507	661	King Whiting	39,600	15,098
Sea Trout, Grey	77,807	28,565	Mullet	145,868	26,804
Spot	51,687	15,261	Pigfish	3,172	651
Crab, Blue, Hard	118,326	34,487	Pompano	56	39
Shrimp (heads on)	113,100	240,276	Scups or Porgies	37	30
Clams, Hard (meats)	92,540	346,285	Sea Basses, Unclassified	2,552	1,919
Oyster (meats)	25,632	50,141	Sea Trout, Grey	92,435	33,540
			Sea Trout, Spotted	2,972	2,282
			Spanish Mackerel	89	36
			Spot	65,196	17,590
			Crab, Blue, Hard	48,831	8,521
			Shrimp	284,504	634,857
			Clams, Hard (meats)	60,495	214,130
			Oyster, Public, Spring (meats)	9,005	18,010
			Oyster, Public, Fall (meats)	10,627	18,869
			Oyster, Private, Spring (meats)	1,484	2,983
			Scallop, Bay (meats)	2,141	3,213
COUNTY TOTAL	729,642	\$808,588	COUNTY TOTAL	936,242	\$1,073,338

The fishing industry has been, and continues to be, a very important part of the economy. Table 9 shows that in 1981, 684,544 pounds of fish were caught with a value of \$622,902; while in 1984, 936,242 pounds were caught with a value of \$1,073,338. Although these dollar amounts appear to be relatively small compared to retail operations in the County, the fishing industry, both commercial and recreational fishing, is a very special and important part of the local character and economy of Pender County and continues to provide job opportunities through facilities such as the Atlantic Seafood Company in Hampstead and others.

TABLE 10
PENDER COUNTY FORESTRY
1983

Estimated Value to Land Owner *(Includes Public and Private Land)	\$5,414,000
Value of Logs Delivered to **Point of Manufacturing	\$8,727,000

Source: *Commodity Survey from N.C. Division of Forest Resources
**Stump Value Composite, Division of Forest Resources

Like agriculture and fishing, the forestry industry continues to be a very important part of the local economy. Table 10 shows that in 1984, over \$5 million was generated for local property owners through the harvesting of trees, with over \$8 million in value being generated for logs delivered to points of manufacturing.

Local companies, like Pender Lumber Company, Williams Lumber Company, and Nunalee Lumber County, are able to use local forest products, and thereby continue to provide local job opportunities in Pender County.

TABLE 11
PENDER COUNTY TOURISM INCOME
1980-1985

1980	\$ 5,787,000
1981	6,414,000
1982	7,710,000
1983	10,080,000
1984	18,264,000
1985	21,144,000

Source: N.C. Travel and Tourism Division, Department of Commerce

As shown in Table 11, one of the fastest growing segments of the economy is tourism income. In 1980, \$5,787,000 in tourism dollars were spent in Pender County, primarily for restaurants, gas, food, and lodging at the beaches. In 1985, tourism income was \$21,144,000, which represents a substantial increase in tourist dollars being spent in the County. With the continued growth at the beach, tourist attractions near Hampstead, and the opening of I-40 between Raleigh and Wilmington during the planning period, this segment of the economy will most likely continue to grow.

Also, with the work of the Economic Development Commission and improved highway access during the five- to ten-year planning period, the County will most likely experience continued growth of industry, such as the Takeda Plant on 421 and other smaller industries that have located throughout the County since 1981.

TABLE 12
PENDER COUNTY, NORTH CAROLINA
PER CAPITA PERSONAL INCOME
1969 - 1981

	<u>69</u>	<u>70</u>	<u>71</u>	<u>72</u>	<u>73</u>	<u>74</u>	<u>75</u>	<u>76</u>	<u>77</u>	<u>78</u>	<u>79</u>	<u>80</u>	<u>81</u>
State	2,999	3,220	3,410	3,789	4,241	4,587	4,860	5,350	5,770	6,475	7,125	7,780	8,656
Pender	2,034	2,357	2,495	2,808	3,203	3,462	3,765	4,031	4,380	4,901	5,485	6,054	6,892
Onslow	2,828	3,314	3,339	3,931	4,341	4,851	4,661	4,834	4,499	4,934	5,401	5,989	7,089
New Hanover	3,175	3,396	3,555	3,970	4,386	4,677	4,966	5,497	6,002	6,728	7,591	8,339	9,158
Wake	3,677	3,962	4,182	4,563	5,018	5,465	5,922	6,459	7,026	7,835	8,851	9,633	10,623
Durham	3,376	3,680	4,072	4,460	4,711	5,176	5,711	6,225	6,744	7,498	8,333	9,158	10,095
Mecklenburg	4,066	4,305	4,622	5,091	5,542	5,974	6,381	6,954	7,592	8,490	9,523	10,335	11,460
Guilford	3,864	4,154	4,444	4,920	5,381	5,890	6,179	6,708	7,274	8,204	9,045	9,913	10,943
Forsythe	3,705	4,025	4,243	4,652	5,182	5,654	6,101	6,776	7,459	8,198	8,958	9,912	11,014

Sources: September, 1984, Profile, North Carolina Counties

As more people locate in the County, it is worth noting the per capita personal income for the County. Table 12 shows that Pender County's per capita personal income was approximately \$1,764 less than the State average based on 1981 figures. Per capita income continues to increase, although it is slightly less than Onslow County to the north and approximately \$2,266 less than New Hanover County to the south of Pender County. With the recent opening of better access to Wilmington by way of I-40 and the very attractive developments on the water near Hampstead, it is likely that many people working in Wilmington will continue to choose to live in Pender County because of its many fine qualities and rural atmosphere. If this trend continues, the per capita income level for the County may make even larger gains in the future. As reflected on Table 12 in 1981, New Hanover County per capita personal income was above the State average by more than \$500.00.

Overall, the economic picture for Pender County looks very bright during the five to ten-year planning period.

2. Existing Land Use

Pender County is the seventh largest County in North Carolina with 559,885 acres of land and water area. The County contains the four municipalities of Surf City, Topsail Beach, Burgaw, and Atkinson, with each of these municipalities recently preparing or planning to prepare their own CAMA Land Use Plan Updates.

In preparing information on existing land use (see existing Land Use Map) for Pender County, Talbert, Cox & Associates, Inc., first obtained copies of the updated Land Use Plan for Topsail Beach, which was prepared in 1985. The plan reflects existing land use for single-family residential, duplex, multi-family, commercial, public, institutional, and vacant land. The Surf City plan was prepared in 1981 and is currently being updated. The 1981 plan shows existing residential, commercial, and institutional uses. For those interested in existing land use or land classification information for the beach area, they are referred to these two land use plans.

Existing land use for the remaining portion of the County was obtained from a windshield survey, the use of 1984 Department of Transportation photos, and a windshield survey for the area between U.S. 17 and the Intercoastal Waterway using 660' scale aerial photos as a base. This more detailed survey was conducted because of the very rapid growth rate between U.S. 17 and the Intercoastal Waterway, as discussed in the population section of this report, and in an effort to determine how extensive this development is and what impact it might have on the ecosystem along the Intercoastal Waterway.

Topsail Township

Based on the survey, we found that commercial development continues to concentrate along U.S. 17 near Poplar Grove Plantation, Hampstead, near Vista, and at the intersection of S.R. 1560 and U.S. 17. In addition to commercial uses along the U.S. 17 corridor, two public schools and a public library are located between Hampstead and the Belvedere Plantation development.

Single-family residences are located along S.R. 1571 at Scotts Hill, with water access for boats at Scotts Hill Marina. A large area between Scotts Hill and Washington Acres is wooded and undeveloped. Washington Acres has approximately 75 lots developed, with most of these developed lots being concentrated on or near the water. Washington Acres also has a boat landing available. Deerfield, at the time of the survey in late 1985, had 21 developed lots, with most of those being located on the water. Development along S.R. 1614 and 1616 between Hampstead and the Intercoastal Waterway is a combination of conventional homes and mobile homes.

Both Olde Point and Belvedere Plantation are very attractive planned communities surrounding golf course facilities. The development along S.R. 1575 at the waterfront is a relatively high-density single-family development with rather small lots. Also, at the waterfront, a marina is being developed as part of the Belvedere community. Continuing north on U.S. 17, the next major new development is Topsail Green, which is an attractive mobile home development around an 18-hole golf course.

State Roads 1561, 1564, and 1578 have a combination of conventional and mobile home development on single lots, with Bay Harbour, north of S.R. 1561, in the early development stages with only two developed lots in late 1985.

Virginia Creek Forest, off of S.R. 1560, and Deer Run and Cedar Landing, near N.C. 50, are large, primarily mobile home developments. Gabes Point is a larger residential development with entrance from N.C. 50 at the entrance to the Surf City and Topsail Beach Bridge. Lots on or near the water are developed, with many of the interior lots undeveloped.

All of the remaining land areas between U.S. 17 and the Inter-coastal Waterway are either forested or agricultural areas, uncultivated fields, marsh, or bodies of water.

The remaining portion of Topsail Township between U.S. 17 and the Topsail Township boundary consists of the Holly Shelter Game-land, forested and agricultural areas, or strip residential development along Highway N.C. 210 or S.R. 1002.

Holly Township

The Holly Township is a very rural part of the County, with mostly residential and some commercial development being concentrated near Maple Hill. Additional residential development is located along Highway 53, with a large blueberry farm located near the center of the Township. The remaining land area is forested areas, open fields, or agricultural land, and the Angola Bay Game Land at the northern edge of the Township. This Township also contains the Maple Hill quarry consisting of approximately eleven acres and extensive forested areas that are subject to forest fires as demonstrated by the Spring 1986 forest fires in the vicinity.

Union Township

Union Township contains the communities of Penderlea, Willard, and Watha. Residential and commercial uses are concentrated along U.S. 117 and along roads leading to or near the communities of Penderlea, Willard, and Watha. A major new land use is the recently opened I-40 thoroughfare, with an access point to Willard at U.S. 117. The remaining portion of the County is wooded or agricultural in use.

Burgaw Township

Burgaw, the County's largest municipality, is located near the center of this Township. Residential, commercial, and institutional land uses are concentrated inside the Town limits of Burgaw, with strip residential and commercial development being located along major thoroughfares, such as U.S. 117, N.C. 53, and other state roads. I-40 and N.C. 53 intersect near Burgaw and provide greatly improved access to Burgaw from the northern and southern part of the County and to adjacent New Hanover County and Wilmington. The remaining land area is primarily agricultural and forested areas, cultivated farmland, or fields.

In addition to the recent opening of I-40 to Burgaw, the area is also in the process of opening a new shopping center at the intersection of U.S. 117 and N.C. 53. Once this facility is in operation, additional land use changes in this area can be anticipated, particularly along N.C. 53 between I-40 and its intersection with U.S. 117.

Rocky Point, Long Creek, Grady, and Canetuck Townships

These four townships are very rural in character, with residential and some commercial land uses being concentrated along the highway system, such as N.C. 210, U.S. 117, and U.S. 421. The Rocky Point Township has N.C. 210 running east and west, with U.S. 117 and I-40 running north and south. I-40 has an access point to Rocky Point at Highway N.C. 210. Each of these four townships is primarily forested or in cultivated fields and each has experienced substantial population increases between 1970 and 1980. This increase in population will probably continue because of highway access, the relatively short travel time to Wilmington and New Hanover County, and job opportunities available in that area. Also, the proposed location of a Cape Fear Technical School facility and the 1,000 acre + "Lane's Ferry" Industrial Park area and residential development adjacent to the Cape Fear River on N.C. 210 will affect future land use in the area east of Rocky Point.

Columbia and Caswell Townships

Caswell Township contains the municipality of Atkinson, which is located on N.C. 53. Again, residential and commercial uses are concentrated in Atkinson and adjacent to the major thoroughfare in this area. Columbia Township has most of its commercial land uses along U.S. 421, which runs north and south between Wilmington and Clinton to the north. This highway route is the primary access point between Wilmington and Raleigh and other Piedmont area communities. Like other County townships, the remaining land uses are primarily forested areas, fields, or cultivated fields.

In summary, Pender County has a very low density of development with extensive forested areas and agricultural areas throughout the County. Most residential and commercial development is located in municipalities or along highway thoroughfares leading to municipalities or communities. The fastest growing portion of the County is Topsail Township, including Topsail Beach, Surf City, and the area between U.S. 17 and the Intercoastal Waterway. The major land use change affecting the County and completed since the 1981 Land Use Plan was prepared has been the completion and opening of Interstate I-40.

a. Significant Land Use Compatibility Problems

In the conventional application of the concept, there are few significant land use compatibility problems in Pender County. A land compatibility problem is generally identified when two or more land use types are adjacent to each other and one is somehow restricted from expansion because of adverse conditions caused by the other, thus discouraging additional investment in a particular land use.

The 1981 Land Use Plan did not address significant land use compatibility problems as such, but concentrated more on the visual qualities, or impressions, of the County. Because of the County's primarily rural character, there are no significant land use compatibility problems, with the possible exception of residential uses in areas not suitable for septic tank use. In many cases where problems exist, they are due to older developments that took place prior to the more restrictive State septic tank regulations going into effect.

b. Major Problems from Unplanned Development

Again, the 1981 Land Use Plan did not address major problems from unplanned development. However, based on a November 1985 windshield survey of the County, it was apparent that many subdivisions have been developed over the years using dirt roads that will probably not meet today's Department of Transportation road standards. Although this may not be a major problem now for the County, as these developments continue to have homes developed, many of these roads may become maintenance problems from additional use. If they were not originally constructed to State DOT standards or have not been accepted for DOT maintenance, this could become a major long-range problem for the County.

Adoption of subdivision regulations requiring roads to be built to DOT standards will eliminate this problem in the future.

c. Areas Experiencing or Likely to Experience
Changes in Predominant Land Use

The Topsail Township area, and specifically the Hampstead area along U.S. 17, is continuing to change from a rural-type land use to a community. Several new commercial businesses have opened to serve the tourist traffic and residents of the area. One new bank has been built in Hampstead and another is planned, and this growth trend will most likely continue.

The intersection of U.S. 117 and N.C. 53 is changing from a rural character to a shopping center use. Because this area is close to Burgaw, at the intersection of two major highways with access to I-40, this area will probably continue to experience major changes in land use during the planning period. Also, the area between this intersection and the intersection of I-40 and N.C. 53 will probably change in predominant land use.

The location of the Takeda Plant on 421 at the Pender-New Hanover County line may encourage other industry to locate in this part of the County, which is considered a prime location for industrial development because of four land road to State Ports, railroad line access, and potential extension of the Lower Cape Fear Waterline.

The Lane's Ferry area east of Rocky Point between I-40 and the Cape Fear River has recently been changed to a transition class for approximately 1,000 acres of industrial and residential development. As I-40 opens to Raleigh and existing good access to Wilmington, this area will experience substantial growth.

3. Current Plans, Policies, and Regulations

a. List and Summary of Existing Plans

1. Transportation Plan

Pender County does not have an adopted transportation plan. However, the County will work with DOT to prepare and adopt such a plan.

2. Community Facilities Plan

Pender County has a Community Facilities Plan from the mid-1970's, which needs updating.

3. Utility Extension Policies

The County presently does not provide County water or sewer services. A plan has been prepared that discusses a water system in the eastern part of the County.

4. Open Space and Recreation Policies

The County has an old recreation and open space plan, which is in need of updating in order to be useful for current populations.

5. Prior Land Use Plans and Policies

Pender County has prepared and adopted CAMA Land Use Plans in 1976 and 1981. Both of these plans included background land use information and policies as required by the CAMA regulations and both plans have been used in the 1986 update.

b. List and Brief Description of Enforcement

1. Zoning

There is no zoning ordinance at present; however, the Planning Board is working to present an adoptable zoning ordinance.

2. Subdivision Regulations

Draft subdivision regulations have been prepared, but not adopted.

3. Flood Insurance Program

The County came under the Federal Flood Insurance Program on February 15, 1985. Inspections are conducted by the County Inspection Department.

4. Building

The North Carolina Building Code is enforced by the Pender County Building Inspection Department.

5. Septic Tanks

Septic tanks are used extensively throughout Pender County. Enforcement of septic tank use is administered by the County Health Department using applicable State standards.

6. Historic District

Pender County has existing historic and archaeological sites, but at present has no Historic District Ordinance.

7. Nuisance

Pender County does not have an existing Nuisance Ordinance.

8. Dune Protection

Dune protection is regulated through the Coastal Area Management Act requirements. Minor permits are administered by the County's Permit Officer with major permits being administered by the State Permit Officer.

9. Sedimentation

Pender County adopted a Soil Erosion and Sediment Control Ordinance effective January 25, 1975. However, monies were not budgeted to the Soil and Water Conservation District to enact the ordinance and the Department of Natural Resources and Community Development is managing and enforcing the ordinance.

10. Environmental Impact Ordinance

Pender County does not have a local Environmental Impact Ordinance. Major projects must meet requirements of State and Federal environment regulations administered by State and Federal agencies.

C. Constraints - Land Suitability

This section of the Pender County Land Use Plan identifies features of the land or landscape of the County which are or could pose serious constraints to development. Under land suitability, these constraints are generally considered under the broad categories of (1) physical limitations, hazardous (man-made or natural) areas, areas with soil limitations, hazardous slopes, etc.; (2) fragile areas, example: AECs, complex natural areas, or areas with cultural (architectural or archaeological) significance; and (3) areas with resource potential, i.e., productive or prime agricultural or forestlands, or potentially valuable mineral sites (peat, for example). These elements were not discussed in the 1981 Land Use Plan Update. However, because of the implications for updating certain policies, they are discussed and presented below.

1. Physical Limitations for Development

a. Hazard Areas, Including Man-Made Hazards

There are no identified man-made hazard areas.

b. Areas with Soil Limitations

The inherent soil characteristics of the coastal area, with high water table elevations and susceptibility to flooding, can be a major limitation to development. Soils subject to flooding have been identified using information provided by the Soil Conservation Service office in Burgaw. Specifically, the following soils have been identified as soils that are frequently flooded: Bohicket silty clay loam; Carteret fine sand, frequently flooded; Croatan muck; Chewacla loam, frequently flooded; Dorovan muck, frequently flooded; and Muckalee loam, frequently flooded. These soils have such severe limitations (flooding, drainage, etc.) that development for other uses would be impractical and ecologically unsound.

As discussed in the 1976 Land Use Plan and is apparent by looking at the Pender County Detailed Soil Survey, nearly 80% of the County has high water table conditions which place limitations on residential development.

Most of the soils in the County have either severe or moderate limitations for development using septic tanks due to high water table conditions. The wetness condition, without modifications, causes wastewater to saturate the soil and pond on the surface. The deep sandy soil on the beach area and adjacent to some rivers and streams offer little filtration for wastewater due to the rapid permeability rate. Developers will need to exercise caution in developing these areas. Specific conservation soils are listed on page 68 of the plan.

Although flooding is a constraint to development, it can be avoided by building structures above the 100-year flood, if approved by local, State, and Federal agencies having regulatory jurisdiction. The County also has two large pocosins in or near the Angola Bay Game Land and Holly Shelter Game Land, with an additional low, wet area in the southwestern corner of the County near the Bladen, Columbus, and Brunswick County lines.

c. Water Supply

(1) Groundwater Recharge Areas

Wetlands regulate water supplies by retaining and delaying floodwaters and may assist groundwater recharge in some instances (U.S. E.P.A. 1978; Larson 1981). The U.S. Environmental Protection Agency (1978) indicates that wetlands aid in recharging groundwater by channeling water into aquifers. Other sources indicate that the relationship between wetlands and groundwater recharge is not clear (Larson 1981) or is limited to recharge of surficial aquifers and streams or rivers in many cases (Charles Daniels, U.S. Geological Survey, Raleigh). Pocosin wetlands in Pender County that have peat soils and are elevated above the surrounding terrain do recharge groundwater, but at very slow rates (Daniel 1981). Pender County has 150,000 acres of pocosins that could act as recharge areas.

(2) Public Water Supply Watershed

Groundwater comprises the sole source of water supply for both public and private systems in Pender County. Subsurface water of reasonable quality and quantity can be found throughout the County, as the area is underlain by a vast aquifer system from which potable water can be drawn at various depths. There are four geologic strata occurring in the aquifer system underlying the County.

Pleistocene and recent surficial sands cover most of Pender County and constitute the principal water source for individual wells and rural domestic supplies in the County (Von Oesen and Associates, 1972). In the surficial sands, water usually occurs under water table conditions within 15 feet of the land surface. The productivity of this aquifer is limited primarily only by its thickness; it is recharged directly by rainfall and is easily subject to contamination. The surficial sands are the only potable water supply between the Cape Fear and Black Rivers, where the underlying strata contain brackish water.

The Yorktown clays, shell beds, and marls occur on a limited basis east of the Northeast Cape Fear River. This formation is absent in the central and western parts of the County and, unlike the other strata in this area, does not thicken toward the coast (LeGrand, 1960). The Yorktown is rarely used as a source of water supply.

The Castle Hayne limestone underlies the surficial sands in the northeast and southeast sections of the County, outcrops in the central portion of the County, and forms just a thin layer between the surficial and Cretaceous sands in the south. The Castle Hayne is absent from the western part of the County.

The Castle Hayne is not extensively used for water supply in the County, but is potentially valuable as a large, long-term supply, especially in the east. In the beach areas, the formation begins at 35' below msl and its waters occur under artesian conditions; its recharge area would, therefore, be expected to be located elsewhere and not be vulnerable to contamination from the immediate area. In most places where it occurs to the west of the beaches, however, it begins less than 25' under highly permeable surficial sands. Under these conditions, a high recharge rate could be expected (Wiggins-Rimer and Associates, 1973).

The quality and quantity of water from the Castle Hayne aquifer vary in different locations. It ranges from hard to very hard, with a pH of 7-8. In the Surf City-Holly Ridge area, it is low in chlorides and high in iron locally; and at Holly Ridge, indications are that a specific capacity of 50-70 gpm/feet of drawdown can be obtained (Laymon, 1965). Most attempts to obtain good water from the Castle Hayne in the immediate beach areas have proved unsuccessful thus far.

The Peedee Cretaceous sands, limestones, and marine clays occur throughout Pender County. For the most part, west of the Northeast Cape Fear River, the Peedee immediately underlies the surficial sands. Toward the east, it occurs beneath, and is in hydraulic connection with the Castle Hayne. In both cases, the Peedee is recharged directly by rainfall. In the beach areas, however, the formation occurs deep and its water is under artesian conditions. Recharge to the Peedee, therefore, probably does not take place in the immediate beach areas.

The Peedee furnishes water to many wells drilled west of the Northeast Cape Fear River; wells in it vary from 50-200 feet deep and yield up to 300 gpm (Wiggins-Rimer & Associates, 1973). In the eastern part of the County, it is rarely used for water supply, as it can be high in chlorides and too deep to be used economically.

Subsurface water quality and yields for specific locations in Pender County can be determined only on an individual case basis with a test well. Often, water obtained from shallow aquifers

will contain excessive amounts of iron. In some locations, local people have become accustomed to iron or hydrogen sulfide concentrations that others would find objectionable. The quality that can be expected can sometimes be estimated from the condition of wells nearby.

In general, satisfactory water can be obtained from some depth most anywhere in Pender County; and with the numerous existing water table wells, most of the surficial sands throughout Pender County function, to a certain degree, as recharge areas.

(3) Well Fields

Pender County does not have a County water system, therefore, there are no public well fields. However, wherever recharge takes place for private wells, there are private well fields.

d. 12% Slopes

The soils of Pender County are predominately level or gently sloping. However, a few areas of the County have slopes of up to 30%. The sandy areas east of US 17 and along the southern portion of US 421 have slopes up to 6%. In the western part of the County, along the Black River and back toward US 421, slopes range from less than 1% up to 12% slopes. The area along the northern border of Pender has slopes up to 12% along the Rockfish Creek. The Newhand soil of the outerbank area has slopes ranging up to 30%. All soils that have been cleared have a tendency to erode. The steeper slopes combined with loamy or clayey subsoils erode faster than sloping sandy soils. However, the sandy soils will experience wind erosion as well as water erosion if not protected.

2. Fragile Areas

These are areas which could easily be damaged or destroyed by inappropriate or poorly planned development. There are several fragile areas in Pender County including those areas identified as Areas of Environmental Concern (AECs), including coastal wetlands, estuarine waters, public trust waters, and ocean hazards areas. The County also includes pocosins which are identified on the County's detailed soils report and "404" regulated Wetlands as defined by the U.S. Army Corps of Engineers.

a. Coastal Wetlands

Coastal wetlands are defined as any salt marsh or other marsh subject to regular or occasional flooding by tides, including wind tides (whether or not the tide waters reach the marshland areas through natural or artificial watercourses), provided this shall not include hurricane or tropical storm tides. Salt marsh or other marsh shall be those areas upon which grow some, but not necessarily all, of the following salt marsh and marsh species: Smooth or Salt Water Cordgrass (Spartina alterniflora); Black Needlerush (Juncus roemerianus); Glasswort (Salicornia spp.); Salt - Meadow Grass (Spartina Patens); Sea Lavender (Limonium spp.); Bulrush (Scirpus spp.); Saw Grass (Cladium Jamaicense); and Salt Weed Grass (Spartina cynosuroides). Included in this definition of wetlands is "any contiguous land as the Secretary of NRCD

reasonably deems necessary to affect by any such order in carrying out the purposes of this Section." (G.S. 113-230[a]).

Pender County has jurisdiction over extensive wetland areas, primarily between the mainland area and adjacent tributaries, and the beach areas, and adjacent to the Intercoastal Waterway from Onslow to New Hanover County.

These wetlands along our coast serve as a critical part of the ecosystem. Estuarine dependent species like fish and shellfish make up over 90% of the total value of North Carolina's commercial catch, and therefore, it is necessary that any future adjacent development be sensitive to this fragile environment and meet applicable County, state or federal regulations for development.

Low tidal marsh also serves as the first line of defense against shoreline erosion by dissipating wave action.

b. Sand Dunes

Sand dunes are defined as ridges or mounds of wind-blown material, usually sand. These occur at Topsail Beach and Surf City and would be addressed in their CAMA Land Use Plan.

c. Ocean Beaches and Shoreline

Ocean beaches and shoreline are defined as land areas without vegetation covering and consist of unconsolidated soil material that extends landward from mean low tide to a point where any one or combination of the following occur: (1) vegetation, or (2) a distinct change in predominant soil particle size, or (3) a change in slope or elevation which alters the physiographic land form.

Sand deposits of ocean beaches and shorelines represent a dynamic zone which does not afford long-term protection for development. The nature of tidal action and the force of storms is such that they cause the beach areas to shift constantly. Littoral drift is a natural phenomenon whereby sand is removed from beaches by wave action and littoral currents and is deposited upon a different stretch of the beach; this action also shifts the line of high tide and low tide. Ocean beaches and shorelines are valuable for public and private recreation and are located within natural hazard areas. Thus, development within these dynamic zones may result in loss of property and possible loss of life.

Such areas must be preserved to the greatest extent feasible with opportunity to enjoy the physical, aesthetic, cultural and recreational qualities of the natural shorelines of the State. Ocean beaches and shorelines occur at Topsail Beach and Surf City and will be addressed in those plans. Ocean beaches and shorelines in the County's jurisdiction include Lea & Hatter Islands.

d. Estuarine Waters

Estuarine waters are defined as all water of the Atlantic Ocean within the boundary of North Carolina and all the waters of

the bays, sounds, rivers and tributaries there to seaward of the dividing line between coastal fishing waters and inland fishing waters, as set forth in an agreement adopted by the Wildlife Resources Commission and the Department of Conservation and Development filed with the Secretary of State entitled "Boundary Lines, North Carolina Commercial Fishing-Inland Fishing Waters, revised March 1, 1965" or as it may be subsequently revised by the Legislature. In addition to estuarine waters AECs there are adjacent estuarine shoreline AECs as defined by CAMA regulations.

These areas are among the most productive natural environments of North Carolina, for they not only support valuable commercial and sports fisheries, but are also utilized for commercial navigation, recreation, and aesthetic purposes. Species dependent upon estuaries, such as menhaden, shrimp, flounder, oysters and crabs make up over 90 percent of the total value of North Carolina's commercial catch, and these species must spend all or some part of their life cycle in the estuary. The high level of commercial and sports fisheries and the aesthetic appeal of coastal North Carolina are dependent upon the protection and sustained quality of our estuarine areas.

Pender County estuarine waters are located generally between the mainland side of the Intercoastal Waterway and the Atlantic Ocean.

e. Public Trust Waters

Public trust waters are defined as all waters of the Atlantic Ocean and the lands thereunder from the mean water mark to the seaward limit of State jurisdiction, all natural bodies of water subject to measurable lunar tides and lands thereunder to the mean high water mark, all navigable natural bodies of water and lands thereunder to mean high water mark or ordinary high water mark, as the case may be, except privately owned lakes to which the public has no right of access, all waters in artificially created bodies of water in which exist significant public fishing resources or other public resources, which are accessible to the public by navigation from bodies of water in which the public has no rights of navigation, all waters in artificially created bodies of water in which the public has acquired rights by prescription, custom, usage, dedication or any other means. Included in public trust waters are areas such as waterways and lands under or flowed over by tidal waters or navigable waters, to which the public may have rights of access of public trust rights, and areas which the State of North Carolina may be authorized to preserve, conserve, or protect under Article XIV, Section 5, of the North Carolina Constitution. Public trust waters in Pender County include the Cape Fear River, Northeast Cape Fear River, Black River, and Morgan, Long, and Turkey Creeks and other naturally flowing streams.

f. Complex Natural Areas

Pender County has three areas that can be considered complex natural areas, as discussed in the 1981 Land Use Plan.

Angola Bay has extensive tracts of tall evergreen shrub pocosins, mixed pond pine pocosin, and pond pine forests. It is believed to serve as an important wildlife habitat for various endangered or threatened species.

Holly Shelter is a 100-square mile wilderness which contains both low and high pocosin wetlands. It serves as a habitat for bear, alligators, red-cockaded woodpeckers, eastern diamondback rattlesnakes, et al. There have been seven rare plant species identified in this area. They include the venus flytrap, white wicky (*Kalmia cuneata*), roughleaf loosestrife (*Lysimachia asperulaefolia*), and others. There is also a 300-acre (*sarracenia flava*) pitcherplant bog.

Near Rocky Point, there is a 40-acre, badly cut-over bottom-land called the Rocky Point Marl Forest. It consists of a mixture of pine and sweet gum trees and contains rare herbaceous species. It also contains out-croppings of the Castle-Hayne limestone formation marl. This is the only North Carolina location for the rare carya myristicaeformis. The County Planning Board discussed possible local regulation of the complex natural area but felt there are adequate federal and state regulations.

g. Areas That Sustain Remnant Species

Angola Bay, Holly Shelter, and the Rocky Point Marl Forest, discussed above, sustain remnant species.

h. Unique Geologic Formations

As discussed in the 1981 Land Use Plan, an abandoned rock quarry near Maple Hill has the best known exposure of the fossiliferous Castle-Hayne limestone formation, probably the most significant geologic layer in eastern North Carolina due to its water-carrying capacity in this part of the State.

i. Registered Natural Landmark

Pender County does not have any Registered Natural Landmarks.

j. Wooded Swamps

Wooded swamps and seasonally flooded basins, as defined by the U.S. Fish and Wildlife Service, Circular 39, "Wetlands of the United States," occur in Pender County. Based on information from the Soil Conservation Service, they can be identified by the hydric soil types and by hydrophytic vegetative cover. It is estimated that there are 80,000 acres of wooded swamps or seasonally flooded basins in Pender County. Information on specific locations can be obtained from the Soil Conservation office and detailed soils maps.

k. Prime Wildlife Habitat

Game lands, such as Angola and Holly Shelter, provide excellent wildlife habitat, as discussed under complex natural areas. Also, the extensive marsh areas and large bodies of water throughout the County also provide prime wildlife habitats.

1. Scenic and Prominent High Points

Although the County does not have any designated scenic or high points, it does have an abundance of scenic areas throughout the County and particularly along the waterfront areas and marsh areas. Lea and Hutaff Islands are two specific scenic areas in the County.

m. Archaeologic and Historic Sites

Specific information on the location of archaeological sites cannot be given in this report at the request of the North Carolina Department of Cultural Resources. The County presently has six structures on the National Register, which include the following (the County does not have any areas with groupings of structures that could be considered for nomination of an historic district):

National Register

Bannerman House, Player vicinity
Belvedere Plantation House (Merrick-Nixon House),
Hampstead vicinity
Moore's Creek National Military Park
Pender County Courthouse, Burgaw
Poplar Grove, Scotts Hill
Sloop Point, Vista

One structure on the study list, as provided by Renee Gledhill-Early of the Division of Archives and History, include the following:

Study List

Burgaw Railroad Station and Depot

3. Areas With Resource Potential

a. Productive and Unique Agricultural Lands

The most productive agricultural lands in Pender County are identified by the Pender Soil and Water Conservation District as Prime Farmlands and Locally Important Farmlands. This list and the soils maps of Pender County are available from the District office (see Appendix).

b. Potentially Valuable Mineral Sites

Based on information from the Department of Natural Resources and Community Development, Division of Land Resources, Pender County currently has six mineral resource sites which contain deposits of limestone.

	<u>Acres</u>
Stocks Pit Royal State Construction Company	9.0
Williams Pit Prime Construction, Inc.	9.0
Cowan Mine East Coast Limestone	33.0
Brickhowe Pit Dickerson, Inc.	3.0
Rocky Point Quarry Martin Marietta	246.0
Maple Hill Quarry Holly Creek Limestone	11.0

c. Publicly-Owned Forests, Parks, Fish, and Gamelands

Publicly-owned forests include the Angola Game Land and Holly Shelter Game Land. Moores Creek National Battlefield, located on Highway 210, is a federally-owned and operated park. Public trust waters throughout the County provide both recreational boating and fishing opportunities to residents, as well as visitors to the area. If public access and facilities in publicly-owned forests, parks and gamelands would benefit the County, any federal or state grants for such development will be secured if possible.

d. Prime Farmland

Prime farmlands have been identified by soil type and are listed in the Soil Conservation Service - USDA office in Burgaw. There are approximately 98,780 acres of prime farmland in Pender County. Soil maps are available from the SCS office (see Appendix.) These 98,780 acres are in varying forms of production from farmland to timber production.

D. Constraints - Capacity of Community Facilities

1. Existing Water and Sewer

At present, the County does not have a County water or sewer system. Each of the County's municipalities, with the exception of Atkinson, has its own water system and details on each are discussed in their respective CAMA Land Use Plans. Burgaw has a sewage treatment facility; however, Topsail Beach does not have central systems and must continue to use individual septic tanks for sewage disposal. Surf City has a waste treatment facility with a 550,000 gpd capacity which should be adequate to serve the area for 10 years.

2. Design Capacity for Water Treatment, Sewage Treatment Plant, Schools, Land Fill, and Primary Roads

As discussed in the previous section, Pender County does not have a water or sewer system. The details of operation for the water system and sewer system at Lane's Ferry will be decided in the future by County officials and the Industrial Park Developer.

Based on information from the Superintendent of Schools, grades 9-12 are experiencing a decline in student population in the western part of the County, with an increase in the eastern part of the County. Three of the schools in the system were constructed prior to 1924. The following list reflects design capacity and school enrollment in 1974-75, 1981-82, and 1985-86.

Table 13: School Capacity and Utilization

<u>School</u>	<u>Grades</u>	<u>Design Capacity</u>	<u>Enrollment</u>		
			<u>1974-75</u>	<u>1981-82</u>	<u>1985-86</u>
Topsail High	K-3 & 8-12	814	477	559	554
Topsail Middle	4-7	374	270	426	289
Rocky Point Elementary	K-6	264	203	239	233
Long Creek Elementary	K-6	308	247	271	259
Atkinson Junior	6-9	352	242	208	190
West Pender Elementary	K-5	264	239	220	231
Pender High	10-12	946	775	852	1,033
Burgaw Elementary	K-6	572	586	633	510
Burgaw Junior	7-9	660	658	584	523
Penderlee Junior	4-9	616	426	397	293
Willard Elementary	K-3	132	149	145	141
Maple Hill Elementary	K-6	154	136	133	139
TOTAL		5,456	4,409	4,667	4,594

Table 13 shows that many of the schools are under design capacity with Pender High being 87 students over design capacity with Penderlee Junior High being 323 students under design capacity.

Primary roads include I-40, U.S. 117, U.S. 17, U.S. 421, N.C. 210, and N.C. 53. I-40 has recently been completed and will be adequate to serve the area throughout the planning period. The southern section of U.S. 421 is a four-lane facility and will be adequate to serve this portion of the County for many years. A four-lane facility between I-40 and the beach area of Pender County would have an additional positive effect on the local economy by encouraging more tourism. (See 1986-95 Transportation Improvements Map in Appendix.)

3. Level of Utilization for Water System, Sewage System, Schools, and Primary Roads

As discussed earlier, the County does not have a water or sewer system. County residents must utilize individual wells and septic tanks.

As reflected in Table 13, the design capacity of school facilities is to accommodate 5,456 students. Presently, the school system has approximately 4,594 students; however, Pender High School is above design capacity as of the 1985-86 school year.

Primary roads appear to be adequate for the planning period. I-40 is presently being under-utilized, but that will change dramatically upon completion of this interstate highway connecting southeastern North Carolina with the Piedmont and mountain sections of the state. U.S. 17 continues to carry substantial traffic, and a U.S. 17 study had proposed widening of the facility; however, this proposed widening is not reflected in the NCDOT Transportation Improvement Plan.

4. Capacity of Community Facilities to Supply Existing and Anticipated Demand

The planning questionnaire shows that of the 608 responses, 288 did not want the County to provide County water, 176 did, and 144 were not sure. Based on the present low density of the County and a relatively slow growth rate, projected individual wells should be adequate to meet current and anticipated demand.

When citizens were asked about a County sewer system, of the 616 responses, 412 favored a County sewer system, 112 were not sure, and 92 were against a County sewer system in rapidly growing areas of the County. Again, because of relatively small population projections and current low density of development, individual septic tanks should be adequate during the planning period. However, the County may begin to look at alternative ways to serve the faster growing areas near the more ecologically sensitive parts of the County.

Overall, schools are currently able to serve present student populations, with the exception of Pender High School. Student population appears to be increasing in the eastern part of the County, and stable or decreasing in the central and western portion of the County. Many of the schools are old and in need of renovation or replacement. During the planning period, a bond referendum may be used to generate needed funds to accomplish school improvements.

E. Estimated Demand

1. Population and Economy

Table 13 reflects continued population growth during the next 10 year planning period. Table 14 reflects projected population increases by age group, specifically the 40-54 age group is growing, while the 10-19 and 25-29 age group is projected to decrease during the next 10 years. As the overall population increases, the local economy continues to diversify and more tourists find access to the area improved by way of I-40, the local economy should continue to expand. At present, the economic future for Pender County looks very bright.

a. Seasonal Population

Seasonal population increases occur primarily along the beach area of Surf City and Topsail Beach. The 1981 Surf City Land Use Plan projected a seasonal population by 1990 of 940 people with a projected permanent population of 500 people by 1990. The 1985 Topsail Beach plan projects an average seasonal population of 10,072 people with an ultimate peak seasonal population of 14,528 using 7.5 persons per dwelling unit during peak vacation periods.

b. Local Objectives Concerning Growth

The primary objective of County officials is to encourage development and growth that does not adversely affect the environment or other existing development. The County will encourage and support growth and development that provides improved job and housing opportunities for County citizens.

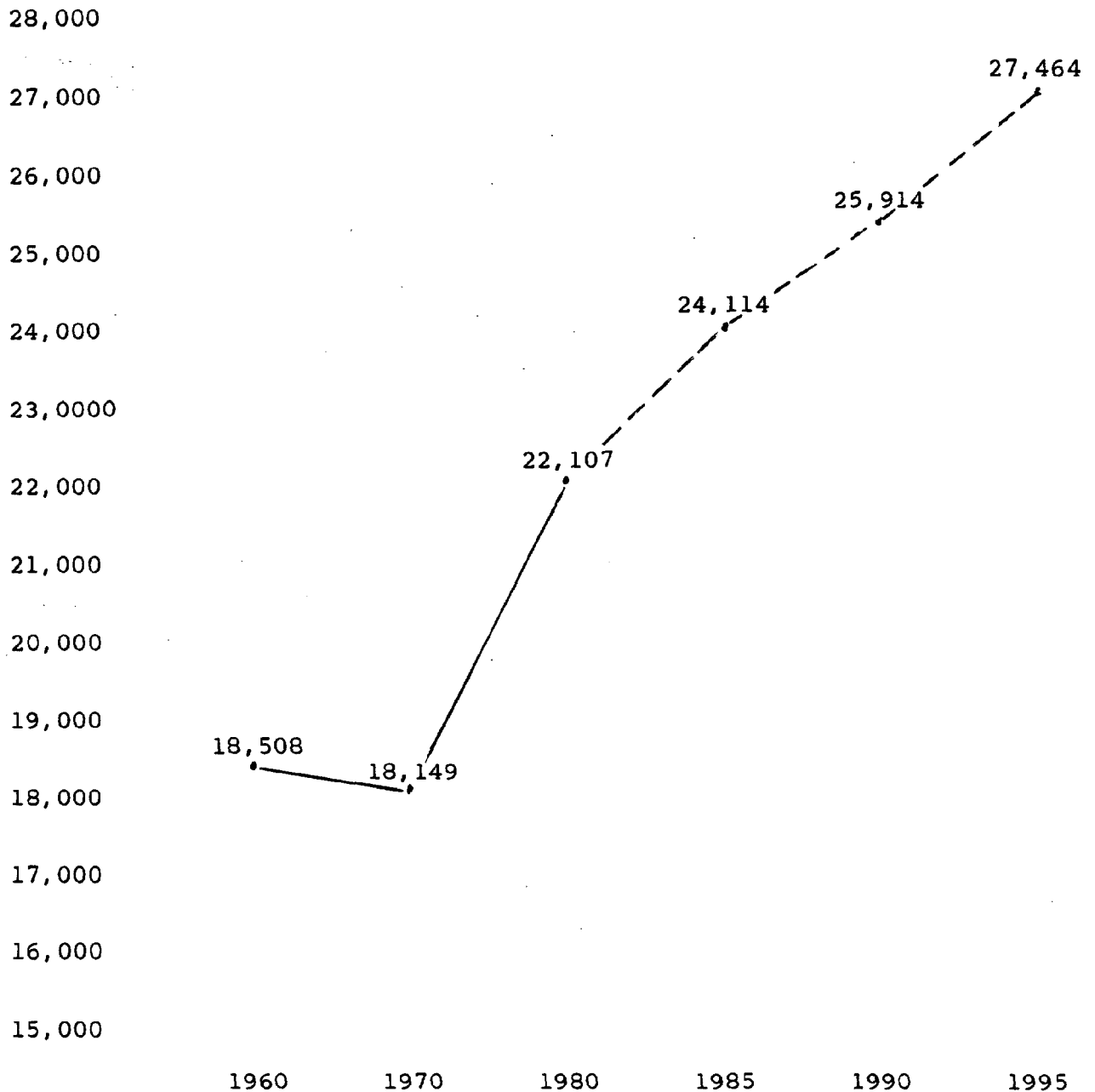
c. Forseeable Social and Economic Change

The County anticipates continued diversification of the County tax base through the efforts of the Industrial Development Commission. The County also anticipates continued growth of the tourist industry which will have a positive affect on many of the County's citizens by providing expanded job opportunities and support for existing businesses. The per capita income for County citizens should continue to rise, having a positive impact on the social and economic fabric of the County. As noted in Table 14, the younger age groups, 20-29, are either decreasing or stable. This age group represents those people forming new families, buying houses, buying furniture, etc. If this trend continues, there will be fewer dollars spent in establishing new homes; however, the older age group, which is expanding, will most likely help expand the economy as more people retire in Pender County or move here to retire.

FUTURE POPULATION OF PENDER COUNTY

Based on the North Carolina Office of State Budget and Management projections, Pender County can anticipate continued population growth during the planning period, as shown on Table 13.

Table 13



Source: 1960, 1970, 1980 Census and 1985 Population Projections by
N.C. Office of State Budget and Management

PENDER COUNTY

POPULATION PROJECTIONS BY AGE GROUP

TABLE: 14

AGE GROUP	1985		1990		1995	
	TOTAL	% of COLUMN TOTAL	TOTAL	% of COLUMN TOTAL	TOTAL	% of COLUMN TOTAL
0-4	1,680	6.97	1,758	6.78	1,762	6.42
5-9	1,804	7.48	1,764	6.81	1,953	7.11
10-14	1,886	7.82	2,003	7.73	1,853	6.75
15-19	1,748	7.25	1,972	7.61	1,817	6.62
20-24	2,052	8.51	1,556	6.00	1,898	6.91
25-29	1,783	7.39	1,951	7.53	1,737	6.32
30-34	1,886	7.82	1,963	7.58	2,110	7.68
35-39	1,787	7.41	2,033	7.85	2,051	7.47
40-44	1,458	6.05	1,872	7.22	2,098	7.64
45-49	1,186	4.92	1,522	5.87	1,893	6.89
50-54	1,192	4.94	1,238	4.78	1,610	5.86
55-59	1,234	5.12	1,294	4.99	1,288	4.69
60-64	1,269	5.26	1,282	4.95	1,314	4.78
65-69	1,093	4.53	1,275	4.92	1,205	4.39
70-74	881	3.65	1,005	3.88	1,108	4.03
75-79	580	2.41	729	2.81	820	2.99
80-84	358	1.48	421	1.62	559	2.04
85&UP	237	0.98	276	1.07	388	1.41
	24,114		25,914		27,464	

Source: North Carolina Office of State Budget and Management Based on 70-80 Census
Data Prepared November, 1985

2. Future Land Need

Between 1985 and 1990, the County is projected to grow by 1,800 people. Using the 2.91 persons per household, this represents an additional 618 households during this five-year period or approximately 123 new households per year.

Between 1990 and 1995, the County is projected to grow by 1,550 people or 532 households. Because of the County's low density, and the numerous lots already plotted, there should be no problem accommodating an additional 1,150 households or more during the ten-year planning period.

3. Community Facilities Demand

As discussed earlier, individual septic tanks and wells should be adequate to continue to serve current needs and projected needs. A new incinerator is being planned for the County, and this facility should be adequate to serve the County during the planning period. There is a need for improvements to schools in the County's school system to accommodate growing population in certain portions of the County and reduced population in other areas of the County. Addressing this need is an ongoing responsibility of the Pender County School Board. Adequate roads are of great importance to the County, and working with NCDOT to improve the County's road system will remain a high priority.

POLICY STATEMENTS

II. POLICY STATEMENTS

A. Resource Protection

1. Areas of Environmental Concern

Pender County recognizes the primary concern of the Coastal Management Program is to provide a means for planning sound economic growth that is sensitive to the need to protect natural resources. County officials share this concern for the protection and sound management of these environmentally sensitive lands and waters. As listed in the 1981 Land Use Plan, Pender County has the following Areas of Environmental Concern (AECs):

- (1) Coastal Wetlands
- (2) Estuarine Waters
- (3) Estuarine Shoreline
- (4) Public Trust Waters
- (5) Inlet Hazard Areas and Ocean Hazards

In terms of developing policies, the estuarine system AECs, which include coastal wetlands, estuarine waters, estuarine shorelines, and public trust areas, will be treated as one uniform grouping since they are so closely interrelated. Another reason for grouping these AECs together is the fact that the effective use of maps to detail exact on-ground location of a particular area sometimes poses serious limitations.

Pender County's overall policy and management objective for the estuarine system is "to give the highest priority to their protection and perpetuate their biological, social, economic, and aesthetic values and to ensure that development occurring within these AECs is compatible with natural characteristics so as to minimize the likelihood of significant loss of private property and public resources." (15 NCAC 7H. 0203) In accordance with this overall objective, Pender County will permit those land uses which conform to the general use standards of the North Carolina Administrative Code (15 NCAC 7H) for development within the estuarine system. Generally, only those uses which are water dependent will be permitted. Specifically, each use permitted in the estuarine system is discussed below.

a. Coastal Wetlands

The first priority of uses of land in this area will be uses which promote "conservation" of this sensitive area, with conservation meaning the lack of imposition of irreversible damage to the wetlands. Generally, uses which require water access and uses such as utility easements, fishing piers, and docks will be allowed, but must adhere to use standards of the Coastal Area Management Act (CAMA: 15 NCAC 7H). These uses change from time to time pursuant to current AEC Standards.

b. Estuarine Waters and Estuarine Shorelines

Pender County officials are very much aware that protection of the estuarine waters and adjacent estuarine shorelines is of paramount importance to fishing, both commercially and for recreation. Pender County recognizes that certain actions within the estuarine shoreline, which is defined as the area extending 75 feet landward of the mean high waterline of the estuarine waters, could possibly have a substantial effect upon the quality of these waters.

In order to promote the quality of these estuarine waters, Pender County officials will permit only those uses which are compatible with both the estuarine shorelines and which protect the values of the estuarine system. Residential, recreational, marine-related facilities, and commercial uses may be permitted within the estuarine shore, provided the developer can demonstrate through an engineer's report, submitted to the Planning Board, that:

1. A substantial chance of pollution occurring from the development does not exist
2. Development does not have a significant adverse impact on estuarine resources
3. Development does not significantly interfere with existing public rights or access to, or use of, navigable waters or public resources

Also, no development or industry should be approved by the County or State that will lower the present water quality in the County.

County officials request review of criteria used by State review agencies by the County Planning Board prior to the State's final recommendation for approval or denial of a Sedimentation and Control Plan.

c. Public Trust Areas

Pender County recognizes that the public has certain established rights to certain land and water areas and that these public areas also support valuable commercial and aesthetic value. Pender County will continue to promote the conservation and management of public trust areas. Appropriate uses include those which protect public rights for navigation and recreation. Projects which would directly or indirectly block or impair existing navigation channels, increase shoreline erosion, deposit spoils below mean high tide, cause adverse water circulation patterns, violate water quality standards, or cause degradation of shellfish waters shall generally not be allowed. Allowable uses shall be those which do not cause detriment to the physical or biological functions of public trust areas. Such uses as navigational channels, drainage ditches, bulkheads to prevent erosion, piers or docks, and bridges shall be permitted.

d. Inlet Hazard Areas and Ocean Hazard Areas

These areas, if applicable, would be addressed in the Surf City and Topsail Beach Land Use Plans.

e. Archaeological AEC

Pender County contains 215 known archaeological sites. Protection of these sites is the responsibility of the N.C. Division of Archives and History.

4. Hazardous and Fragile Land Areas

a. Freshwater Swamps

Pender County supports the CAMA program and the U.S. Corps of Engineers 404 program, which has jurisdiction of regulating development in designated freshwater swamp areas. All freshwater swamps do not necessarily come under CAMA regulations.

b. Marshes

Development in marsh areas is regulated by the local and State CAMA Permit Officers in addition to Corps of Engineers regulations. Pender County's policy is to continue support of these regulations in an effort to protect this sensitive natural environment.

c. Maritime Forests

Maritime forests are present in the Topsail Beach and Surf City area and would be covered under their plans.

d. Cultural & Historic Resources

See list of properties on National Register. No regulations or zoning to protect designated historic structures. The County feels that their resources are adequately protected by the Division of Archives & History.

e. Man-Made Hazards

There are no defined man-made hazard areas in the County. However, military cargoes are transported along Highway 17 and I-40.

f. Hurricane & Flood Evacuation Needs

An entire section within the Policy Statement discussions is included separately for hurricane and flood evacuation, as well as storm mitigation and post-storm redevelopment policies, beginning on page 69.

g. Protection of Potable Water Supply

As discussed earlier, Pender County does not have a water system; however, land uses near groundwater sources are regulated by the North Carolina Division of Environmental Management through N.C.A.C., Subchapter 2L and Subchapter 2C.

Pender County recognizes the importance of protecting potable water supplies and, therefore, supports the enforcement of these regulations if and when applicable.

h. Use of Package Treatment Plants for Sewage Treatment Disposal

Package treatment plants are not being used very extensively in the County. If and when used, these facilities are regulated through the health department using State guidelines. The County will support the use of package treatment plants and enforcement of appropriate regulations in issuing permits for their use as an alternate means to treat sewage other than individual septic tanks.

i. Storm Water Runoff from Agriculture, Residential Development, Phosphate, or Peat Mining

Through County support of the Division of Environmental Management, County officials support efforts to regulate storm water runoff through applicable State and Federal regulations and support the new 575-foot regulation area by the Division of Environmental Management.

County officials request review of criteria used by State review agencies by the County Planning Board prior to the State's final recommendation for approval or denial of a Sedimentation and Control Plan.

j. Marina and Floating Home Development

The development of marinas has significant commercial and recreational potential in Pender County. Therefore, the County supports the development of marinas, in compliance with applicable CAMA regulations, and in waters with the lowest water quality in existence as of January 1, 1987. Floating home development has not taken place in Pender County, and County officials have determined that floating homes could have an adverse impact on water quality. Therefore, floating homes will not be permitted in Pender County regulated waters.

k. Industrial Impacts on Fragile Areas

Pender County officials will continue to support applicable State and Federal regulations as they relate to the siting of new industry, or impact of new industry or environmentally sensitive areas. Proposed locations of future industry will be reviewed by the Economic Development Office, Planning Board or other agency or board as designated by the County Board of Commissioners. The designated review body will make a formal recommendation to the County Commissioners on the appropriateness of the proposed location. Zoning, once adopted, will also be used to direct the location of industrial land areas.

l. Development of Sound and Estuarine System Islands

Many of the Sound and estuarine system islands located in Pender County are located in the planning jurisdiction of Topsail Beach and Surf City. Islands like Hutaff Island and Lea Island have been discussed under the Local Land Use Planning Issues section of this plan. Refer to Issue #16 on page 61.

B. Resource Production and Management

1. Productive Agricultural Lands (Executive Order #96)

Productive Agricultural Lands (Executive Order #96) have been identified for Pender County as Prime and Locally Important Farm and Forestland, as shown on the Pender County detail soils maps. Executive Order #96 is supported by the Pender Soil and Water Conservation District, and a list and soils maps are available at the District Office. (See Appendix A for list of locally important farmland soils and prime farmland soils, as identified by the Soil Conservation Service.) Prime agricultural lands and water quality will benefit from newly-available cost-sharing for agricultural best management practices.

2. Commercial Forestlands

The County's policy has been and will continue to be support of this natural resource through in-kind services to agencies directly involved with the maintenance and support of this resource. Specifically, the County will continue to support the Extension Service, Soil Conservation Service and N. C. Forest Service in their efforts to encourage good forest management. The County would encourage efforts to provide farmers financial incentives to leave forested buffer areas between productive agricultural areas and estuarine waters. The County will also continue to support CAMA and Federal Wetland Programs in an effort to protect fragile areas adjacent to timberlands.

3. Existing and Potential Mineral Production Areas

Pender County presently has two large mining operations. Rocky Point Quarry is a 246-acre site which has been and will probably continue to be in operation for an extended period. The East Coast Limestone Mine is 33.0 acres in size. The County also has potential deposits of peat in several areas of the County and this could be a future source of energy. Other mining sites are listed on page 31 of this report.

The County will encourage the use of natural resources if mining operations meet all State and Federal laws and create no adverse impact on the environment. The County will continue to support the enforcement of State mining regulations.

4. Commercial and Recreational Fisheries, Including Nursery and Habitat Areas

The fishing industry, both commercial and recreational fishing, has been and continues to be an important part of Pender County's economy. The County will continue to support recreational fishing by encouraging the expansion of tourism and vacation development. The County will also support efforts to secure Economic Development Grants to assist local commercial fishing operations, processing or any other means to support the local commercial fishing industry. The County will support efforts to improve the water quality in Pender County which will have a positive impact on recreational and commercial fishing. The County will also work to improve water access through state and federal grants.

5. Off-Road Vehicles

Off-road vehicles would be addressed in the Topsail Beach or Surf City Land Use Plans. Off-road vehicle regulations for Lea and Hutaff Islands would come under the County jurisdiction, and such policy will be formulated as future access and development of these islands require. Holly Shelter and Angola Bay Gamelands are state controlled.

6. Residential and Commercial Land Development

Pender County has been and continues to grow in population. Current and future policy will be to allow the market place to establish the need for and location of future residential and commercial development. Current and future development must meet all established health department regulations, building code regulations, flood regulations, and all local, State and Federal agency requirements. Consideration is now being given to review and adoption of zoning and subdivisions regulations. Upon adoption, these regulations would constitute County policy on all future land development and would be used to direct future land use.

7. Peat and Phosphate Mining

At present, there are no known phosphate deposits in Pender County large enough to justify mining. However, peat is present in the County, but due to current energy costs, peat mining does not appear to be economically feasible on a commercial scale. Pender County officials will address these two issues and establish policy if and when activity in one or both of these areas appears feasible.

C. Economic and Community Development

Issue: Types and Locations of Industries Desired

In 1981, the plan noted the fact that a full-time director for the County Industrial Development Commission had been hired. The plan discussed two potential industrial sites, one near Burgaw at the proposed I-40 and N.C. 53 intersection, and the other near Rocky Point at I-40 and 210 with good access to the State Ports in Wilmington and the Piedmont area of North Carolina, upon opening of I-40. The objective was to encourage balanced growth, support existing industries such as manufacturing, forestry and farming while working to continue the process of diversification of the economic base.

In preparing the 1986 Land Use Plan Update, it is apparent that tremendous progress has been made to expand the County's industrial base since 1976. New facilities like Takeda, Inc., located on the Pender/New Hanover County line and others, show how the County continues to grow. With projected increases in population, improved highway access to Wilmington and to Raleigh in the near future, the County can anticipate continued diversification of the industrial or manufacturing base. Selecting the right types of industry to market is the next step for Pender County in establishing County policy for location and types of industry. Based on the results of the 1986 Land Use Planning Questionnaire, 272 responding would like to see industry locate near I-40 at Willard, Burgaw or Rocky Point, with 210 suggesting that industry locate along the southern section of 421 near the recently opened Takeda plant. 124 preferred the area along Highway 53 between Burgaw and Jacksonville. Very few people, 45, responding to the questionnaire, wanted to see industrial development along U.S. 17, the Ocean Highway. Based on the current and projected growth trends in this area and its use as access to the beach and waterfront development, not having industry in this area could help preserve its lower density appearance and preserve this area for tourist related uses.

Policy:

1. Continue to support the new industrial park on N.C. 210 near Rocky Point.
2. Encourage industrial development along US 421.
3. Support local industry, agriculture, forestry and others in securing federal or State grants to develop or expand industrial operations to utilize or process locally produced products.

4. Adopt a zoning ordinance that provides for the orderly location and development of individual industrial sites or industrial parks with clustering of industrial uses.
5. Pursue federal or state grants to develop and provide needed water, sewer, and other utilities to make industrial development economically feasible.
6. Until adoption of the zoning ordinance, the updated Land Classification map and Land Use Plan will be the only planning tool available along with health department regulations to guide the location of future development.

Issue: Local Commitment to Providing Services to Development

Both the 1976 and 1981 Land Use Plans discussed the fact that Pender County provided services such as fire protection, schools, rescue squad, Sheriff's Department, and solid waste facilities. These earlier plans also acknowledge the fact that neither water nor sewer systems were available from the County. Specifically, the 1976 Plan indicated that a "County-wide water and sewer system is far beyond the financial capability of the County and exceeds its needs." The 1976 Plan also stated that providing water and sewer facilities was a municipal function.

The 1981 Plan listed septic tank problems as a #1 priority problem and a County-wide water system as a # 5 class priority. The plan discussed the problem of some septic tank failure and impact on water quality of the estuarine system as well as potential pollution of the ground water system.

The 1981 Plan policy stated that because of the rural character and low density of the County, a County-wide water system was not justified; however, a study of higher density areas was justified.

The 1981 policy on septic tanks indicated that proper regulation of septic tank placement would prevent ground and surface water pollution. The 1981 Plan did not discuss a County sewer system.

Based on the results of the 1985 land use survey, it is very apparent that portions of Topsail Township are continuing to experience rapid growth. For example, S.R. 1575 has approximately 45 residential units located along a 1-mile section of road and adjacent to the estuarine waters of the intercoastal waterway. Each of these forty-five units has an individual septic tank and is very typical of the higher densities being experienced along the waterway with the potential for pollution of adjacent waters by septic tanks.

Based on the results of the 1986 LUP questionnaire, the majority of those answering did not want the County to consider providing a County-wide water system. Specifically, the question was:

Do you think the County needs to consider providing a County-wide water system, if financially feasible?

Yes	176	28.9%
No	288	47.4%
Not Sure	<u>144</u>	<u>23.7%</u>
Total	608	100.0%

When citizens were asked if the County should consider providing sewage treatment facilities in rapidly growing areas to protect water quality by eliminating the need for septic tank use for sewage disposal, the County received the following responses:

Yes	412	66.9%
No	92	14.9%
Not Sure	<u>112</u>	<u>18.2%</u>
Total	616	100.0%

Based on the results of the questionnaire, there appears to be little interest in a County water system with a great deal of interest in a sewer system to serve rapidly growing areas. Based on these results, concern for protection of the estuarine system, ground water resources and the desire to provide services that are financially feasible and desirable, the County must determine the appropriate steps to take pertaining to providing water and sewer services either in the near or distant future.

Policy:

- ° Continue to regulate septic tank use using applicable local and State regulations.
- ° Based on increases in population now projected, the desire to protect the County's natural resources, County policy will be to begin the planning process for a County sewer system and water system to serve the rapidly growing areas of the county with potential for future expansion. The County will pursue federal or state grants to conduct such studies. Such studies and implementation will help protect County water quality by elimination of the widespread use of septic tanks.

Issue: Commitment to State and Federal Programs, Including Erosion Control, Public Access, Highway Improvements, Port Facilities, Dredging, Military Facilities

The County is committed to erosion control programs through support of the State Sedimentation Control Act.

Public beach access has been and continues to be of great importance to local officials. County officials will cooperate with Surf City and Topsail Beach in efforts to secure additional public beach access for public use and enjoyment. The County will also pursue waterfront access in other parts of the County.

Highway improvements are considered a major factor in ensuring the continued economic growth of the area. The 1985-86 North Carolina Transportation Improvement Plan for Pender County includes a road improvement near Moores Creek National Park and bridge improvements throughout the County. Although all of these improvements are important, none address the need to improve access from I-40 to the beach areas of Pender County. When I-40 is completed between Wilmington and Raleigh, beach areas in Pender County will have greatly improved access to the Piedmont region. Tourism is becoming a very important part of Pender County's economy, but to take full advantage of this expanding market, Pender County will need to provide better access to Pender County beaches. Providing this improved access will be a very high priority for Pender County during the five- to ten-year planning period by working closely with the Department of Transportation to improve access. (See current DOT planned highway improvements in Appendix).

Large port facilities do not presently exist in the County, and any policy pertaining to any proposed facility would be considered on a case-by-case basis.

The County has and will continue to support efforts to dredge areas along the Intercoastal Waterway and other major bodies of water in the County to provide safe access for commercial and recreational boating. Spoil will be placed in approved spoil areas.

Pender County does not have any military facilities within the County; therefore, no policy is necessary.

Policy:

Policy statements for all of the issues discussed above have been given, with the exception of highway improvements. Highway improvements are a very important part of the economic vitality of an area, and the County has addressed this issue under the Local Land Use Planning Issue section of this plan. Refer to page 60, Issue #15.

Issue: Anticipated Residential Development, Densities,
Locations, Units Per Acre, and Services Necessary to
Support Development

As discussed in earlier sections of the plan, Pender County had a density of 26.7 people per square mile in 1983. Although the County continues to grow in population, the County continues to have a very low density of development. The only multi-family or higher density developments in the County are located in Topsail Township, with most of the higher density developments being located in either Surf City or Topsail Beach. County officials anticipate other townships in the County remaining primarily low density and rural in character during the five- to ten-year planning period. At present, the location, density, and units per acre are regulated by State health regulations due to the lack of zoning or subdivision regulations. However, during the planning process to prepare the 1986 Land Use Plan Update, it became very apparent that many people in the faster growing areas of the County want to see more growth management to avoid the mistakes made in other parts of the state or nation. For this reason, County officials are considering establishing zoning and subdivision regulations for use in some or all of the County. Also, based on the results of the Land Use Plan questionnaire, the following was learned concerning the need for County provision of a water or sewer system:

1. Do you think the County needs to consider providing a County-wide water system, if financially feasible?

176 Yes 288 No 144 Not Sure

2. Do you think County officials need to consider providing sewage treatment facilities in rapidly growing areas to protect water quality by eliminating the need for septic tank use for sewage disposal?

412 Yes 92 No 112 Not Sure

Of the 608 responses to Question #1, a clear majority did not think the County should provide a water system. However, when asked about the County's providing sewage treatment facilities in rapidly growing areas to protect water quality by eliminating the need for septic tanks, a clear majority of those answering the questionnaire were in favor of the County considering providing such a system.

In summary, Pender County remains a very rural county, with primarily low-density development. Density and location of development are based on health department requirements with no current water or sewer system to serve current or future development.

Policy:

Density of development and location of development will be established upon approval of zoning for the County, as discussed under the "Zoning" issue. Until zoning is approved, location and density of development will continue to be based on local, State, and Federal regulations, as applicable.

Issue: Types of Urban Growth Patterns Desired - Redevelopment of Developed Areas

The 1976 Land Use Plan indicated that Pender County citizens and County officials desired modest growth near existing development. In 1981, the adopted policy was to guide new growth through the use of zoning and subdivision regulations. However, when zoning and subdivision regulations were discussed at public meetings many citizens, not favoring zoning and subdivision regulations, expressed those opinions while those in favor of zoning did not. As discussed in the population section of this plan, Pender County had a density of 26 persons per square mile in 1983. In 1981, the County was 99.1% rural with very little urban development. Because of the County's very low density, urban growth patterns is not an issue; however, providing the planning tools to guide growth is very much an issue as indicated during the public information meetings held in Burgaw and Hampstead during the early planning stages for this update. The growth pattern issue facing Pender County is how to direct growth and prevent future problems through good growth management.

Redevelopment of developed areas is continuing in areas like Maple Hill through the Community Development Block Grant program. The County will continue this renewal process.

Policy:

- ° The County will prepare a zoning map and ordinance to provide a growth management tool, as discussed under the "Zoning" issue section of this plan on page 54.
- ° County policy will be to zone areas along U.S. 17 to provide for appropriate uses for this major tourist-oriented highway corridor.
- ° County policy will be to determine the best location for industrial development sites or industrial development parks and zone areas accordingly.
- ° The County will continue to work to obtain grants to permit the redevelopment of developed areas in need of such action.

Issue: Assistance to Channel Maintenance and Beach Nourishment Projects, Including Provision of Borrow and Spoil Areas and Provision of Easements for Work

Channel maintenance of areas such as navigable rivers and the Atlantic Intracoastal Waterway is very important to Pender County because of the positive impact on commercial and recreational boating. Continued maintenance of these waterways is a high priority for County officials. Beach nourishment is discussed in the Topsail Beach and Surf City Plans.

Policy: County officials will continue to work with the Army Corps of Engineers and any other State and Federal agencies to ensure continued dredging and maintenance of channels and rivers as needed to keep these facilities open to navigation. Providing borrow or spoil areas and provision of easements for work will be determined on a case-by-case basis. However, the County would prefer that known spoil areas with existing easements for such purpose be used.

Implementation:

1. Maintain contact with congressional representatives and Federal officials as dredging or other channel maintenance operations are needed.
2. County officials will continue to assist local users of these facilities as feasible, and as needs and concerns for dredging or maintenance are brought before local officials or officials determine that a need for such assistance exists.

Issue/Policy: Energy Facility Siting and Development

At present, Pender County is not aware of any plans to construct an energy facility in the County. County policy to deal with such a facility will be formulated if such a facility is proposed.

Issue/Policy: Tourism and Beach and Waterfront Access

Tourism is a major economic benefit for Pender County business and the Pender County tax base. However, providing public access to beaches is the responsibility of Surf City and Topsail Beach. County policy shall be to provide assistance to Topsail Beach and Surf City in promoting tourism and in providing better beach and waterfront access. The County will obtain grants when possible to plan for and provide better beach and waterfront access.

Issue/Policy: Coastal and Estuarine Water Beach Access

As discussed above, providing estuarine water and beach access for public use is a high priority for County officials. Therefore, it shall be County policy to make every effort to provide boating and pedestrian access to the County's estuarine areas and other water courses. The County will cooperate with Topsail Beach and Surf City in providing beach access if requested to provide assistance and will apply for federal and state grants to improve waterfront access. Subdivision regulations will include provisions for future developments to provide public waterfront access.

LOCAL LAND USE PLANNING ISSUES

Local land use planning issues established by the Planning Board and ranked from #1 through #19, with #1 being the most important local issue.

1. ISSUE: Subdivision Regulations

The Pender County Planning Board and Planning Director have been actively working on the preparation of subdivision regulations for the County in 1986. As discussed in the 1981 Land Use Plan, subdivision regulations, once adopted, will help ensure that development does not occur haphazardly and that future development will provide for future tie-in of roads with adjacent property when appropriate. Also, subdivision regulations will provide design standards for setbacks, road designs, buffering, etc., and as also stated in the 1981 plan, subdivision regulations, after adoption, will become a very important land use management tool for Pender County. This regulation will also require public access to the waterfront and funds for purchase of waterfront access areas by the County.

POLICY:

It is Pender County's policy that subdivision regulations become an important land use management tool for ensuring future development is accurately surveyed for recording and engineered following good planning design principles. County officials will continue to work for adoption of a County-wide subdivision regulation in the near future.

2. ISSUE: Zoning Ordinance

As discussed in the existing population and economy section of the plan, Pender County has been and continues to grow in population. As the County population grows and more and more homes and businesses are being developed, it becomes more important that local officials and County citizens have some means to direct and influence the placement of different land uses in the County. The 1976 plan discussed the fact that over 80% of the respondents to a planning questionnaire at that time desired County-wide zoning. During 1986, the Planning Board and Planning Director have been directed by the County Commissioners to prepare a County-wide zoning ordinance for review and adoption.

POLICY:

County policy shall be to prepare and adopt a County-wide zoning ordinance as soon as possible. Upon adoption, the zoning ordinance will be used to direct and guide the location of future land uses and will serve as a land use management tool in the future.

3. ISSUE: Sound Waters

Policy on sound waters has been addressed under AEC Estuarine Waters and Estuarine Shorelines on page 40.

4. ISSUE: Solid Waste

Providing for solid waste disposal is a local responsibility with technical assistance and licensing from the State. Pender County has two landfills, with one near Surf City and the other being located approximately four miles from Burgaw. The County is presently looking for another suitable landfill site and reviewing the possible use of an incinerator for waste disposal.

POLICY:

County policy will be to continue to provide adequate sites and facilities for solid waste disposal.

5. ISSUE: Economic and Community Development - Types and Locations of Industries Desired

The 1976 Land Use Plan discussed the lack of job opportunities in the County other than farming and forestry and the need to expand other employment opportunities to keep young people in the area. The 1976 plan also addressed the need for a full-time industrial development director. The primary concern in 1976 was the need for diversification of the economic base.

In 1981, the plan noted the fact that a full-time director for the County Industrial Development Commission had been hired. The plan discussed two potential industrial sites, one near Burgaw at the proposed I-40 and N.C. 53 intersection, and the other near Rocky Point at I-40 and 210 with good access to the State Ports in Wilmington and the Piedmont area of North Carolina, upon opening of I-40. The objective was to encourage balanced growth, support existing industries such as manufacturing, forestry and farming while working to continue the process of diversification of the economic base.

In preparing the 1986 Land Use Plan Update, it is apparent that tremendous progress has been made to expand the counties industrial base since 1976. New facilities like Takeda, Inc., located on the Pender/New Hanover County line and others, show how the County continues to grow. With projected increases in population, improved highway access to Wilmington and to Raleigh in the near future, the County can anticipate continued diversification of the industrial and manufacturing base. Selecting the right types of industry to market is the next step for Pender County in establishing County policy for location and types of industry. Based on the results of the 1986 Land Use Planning Questionnaire,

272 responding would like to see industry locate near I-40 at Willard, Burgaw or Rocky Point, with 210 suggesting that industry locate along the southern section of 421 near the recently opened Takeda plant. 124 preferred the area along Highway 53 between Burgaw and Jacksonville. Very few people, 45, responding to the questionnaire, wanted to see industrial development along U.S. 17, the Ocean Highway. Based on the current and projected growth trends in this area and its use as access to the beach and waterfront development, not having industry in this area could help preserve its lower density appearance and preserve this area for tourist related uses.

POLICY:

- ° Continue to support the new industrial park on N.C. 210 near Rocky Point.
- ° Encourage industrial development along N.C. 421.
- ° Support local industry, agriculture, forestry and others in securing federal or State grants to develop or expand industrial operations to utilize or process locally produced products.
- ° Adopt a zoning ordinance that provides for the orderly location and development of individual industrial sites or industrial parks with clustering of industrial uses.

6. ISSUE: Drainage

The 1981 Land Use Plan discussed the widespread occurrence of drainage problems because of the high groundwater table and nearly flat topography in the County. In 1986, the County, through the Water Management Office and Community Development Office, has been working to improve drainage in the Maple Hill area of the County. Because drainage problems are a continuing problem, the County will continue to identify specific drainage problem areas and then work with other state, federal, or local agencies to resolve the problems. The recently adopted DEM regulations controlling storm-water runoff within 575 feet of water courses should also help eliminate the adverse impact on the environment.

POLICY:

Pender County will identify areas of the County with drainage problems and then prepare a water management County drainage plan for review and approval by federal and state agencies to address those identified problems. Using programs like the Community Development Block Grant program, CAMA Planning & Management grant, and other programs, the County will continue to work to resolve these drainage problems when feasible.

7. ISSUE: Tax Mapping

The 1981 Land Use Plan discussed the fact that good tax mapping is essential for efficient and equitable property tax administration. Tax mapping can also serve as an excellent base of

information for land use planning and comprehensive land records for public and private use. Recently, the County Commissioners have been discussing the desirability of expediting development of a County-wide tax mapping system.

POLICY:

Establishing a comprehensive County-wide tax mapping system for Pender County would be in the best interest of Pender County citizens. County officials will seek technical and financial assistance to establish a County-wide tax mapping system.

8. ISSUE: Housing

Most of the housing stock in Pender County is either individual lot/conventional units or mobile homes on individual lots or in mobile home parks. Since 1981, there have been several higher density residential developments built at Old Pointe and Belvedere, but most homes are still either mobile homes or conventional stick-built housing units. The County is involved with the Section 8 housing program in an effort to provide better housing for low and moderate income families. The County also has a County Housing Authority, which works to provide decent, safe, and sanitary housing for low- and moderate-income families.

POLICY:

It shall continue to be County policy to assist, where possible, in the provision of decent, safe, and sanitary housing for County citizens with low and moderate income. The County will continue to secure state and federal funds to improve or provide better housing opportunities for low and moderate income citizens.

9. ISSUE: Development Pressure on Streams and Intracoastal Waterway

As projected in the 1981 Land Use Plan, new developments continue to be developed along the Intracoastal Waterway and along streams and rivers throughout the County. Areas like Bay Harbor, Virginia Creek Forest, Gabes Point, Cedar Landing, and Deer Run all appear to be new developments with many lots remaining to be sold or built on. This development pressure will most likely continue because of the desirability of both the stream area and Intracoastal Waterway area for residential development.

With completion of the County's detail soils report, the County has designated soils subject to flooding in the conservation classification on the Land Classification Map. Also, the Federal Flood Insurance Program helps regulate the location of development in flood-prone areas.

POLICY:

Pender County anticipates continued development pressure in areas adjacent to County streams and the Intracoastal Waterway. It shall continue to be County policy to permit development near streams and the Intracoastal Waterway provided such development does not adversely affect or endanger the environment and meets all local, state, and federal regulations.

10. ISSUE: Localized Development Conflicts

Like other coastal North Carolina counties, one of the primary development conflicts is the desirability of land adjacent to the estuarine system for residential or marina development and the impact that development can have on this environmentally sensitive area. Another conflict or potential conflict is the mixing of land uses due to the present lack of zoning in the County. At present, marina development and regulation of waterfront development is affected by state and federal regulations and local health department requirements. Upon approval of a zoning ordinance and map, the County will then have a better means to direct and guide future development to prevent conflicts in the future.

POLICY: It will be the County's policy to adopt a County-wide zoning ordinance and map to assist in eliminating development conflicts in the future.

11. ISSUE: Waterway Access

The 1981 Land Use Plan discussed the fact that continued private development along the County's coastal waters had the potential of reducing the future opportunity for public access to public waters. Presently, the County has public boat launching facilities provided by the N.C. Wildlife Resources Commission at the following locations: (1) end of White Stocking, SR 1512; (2) Highway 11, Black River Bridge; and (3) Shaw Highway, SR 1520.

In an effort to continue to have more and better public access to the water, the County will continue to work with citizens, state and federal agencies, and any other interested groups in providing future public access to the water.

POLICY:

It shall be Pender County's policy to work with local groups and state and federal agencies to secure water access points throughout the County. The County will consider any state or federal financial assistance that may be available to increase the inventory of public water access points.

12. ISSUE: Fishing Industry

Commercial fishing has been, and continues to be, an important part of Pender County's economy and way of life. Recreational fishing provides an important leisure time activity for County residents and a major activity enjoyed by tourists visiting the area. County officials know that to continue to retain this renewable natural resource, it is important to protect nursery areas like Old Topsail Creek, Virginia Creek, Bishops Creek, and others so indigenous fish species will be able to spawn and multiply, thus improving the conditions needed for successful commercial and recreational fishing. (See Table 9, "Pounds Caught/Value.")

POLICY:

The County will continue to support the CAMA program and other state and federal programs that protect water quality to ensure the continuation of nursery areas in Pender County.

13. ISSUE: Inter-County Cooperation

Many, if not all, of the 20 coastal counties involved in the North Carolina Coastal Management Program show some of the same land use related problems, such as development pressure in areas adjacent to environmentally sensitive areas. Economic development opportunities are also of great importance to coastal counties like Pender County, but economic development that does not adversely affect the environment must be a top priority. For example, an area that can have a very positive effect on the local economy while being designed to have minimal effect on the environment would be improved access from I-40 to the beach areas of Surf City and Topsail Beach. This improved access would have a better chance for approval with the cooperative efforts of the County and beach communities. Improved east-west road access would also have a better chance for implementation in the State's Transportation Improvement Plan (TIP) if the County, Atkinson, Burgaw, Surf City, and Topsail Beach could agree on the best east-west route and then support efforts to have that route included in the State's long-range plans. (See appendix for list of projects currently included in the State's TIP for Pender County.)

POLICY:

It shall be County policy to consult and cooperate with other area local governments to identify and solve common problems.

14. ISSUE: Loss of Productive Agricultural Lands, Timber Production and Management, and Truck Farming and Marketing of Products

As discussed in the economic section of this report, agriculture and timber production have been, and continue to be, a very important part of the Pender County economy. Production and management of productive agricultural lands and management of productive forested areas will be assisted by the fact that Pender

County, through the Soil Conservation Office, has identified the most productive agricultural land and prime farmland following completion of the detail soil survey of the County. With this new information, the County now has the ability to use this data as part of the zoning ordinance that is currently being prepared. Specifically, these productive agricultural areas could be placed in an agricultural zone to help protect this natural resource.

POLICY:

The County will use the Soil Conservation Service soil types for productive agricultural lands in preparing the County's zoning ordinance. The County will continue to support and encourage good timber production and management practices and, as stated under the Economic Policy, Section 5, will continue to support local industry, agriculture, forestry, and others in securing federal and state grants to develop or expand industrial operations to utilize or process locally produced products, be it agricultural products or timber products.

15. ISSUE: Transportation - I-40, US 17, NC 421, and Improved East-West Connection

As discussed under the section headed "Commitment to State and Federal Programs," highway improvements are considered a major factor in ensuring the continued economic growth of the area. The 1985-86 North Carolina Transportation Improvement Plan for Pender County includes a road improvement near Moores Creek National Park and bridge improvements throughout the County. Although all of these improvements are important, none address the need to improve access from I-40 to the beach areas of Pender County, widening of US 17, widening of NC 421, and improved east-west access. When I-40 is completed between Wilmington and Raleigh, beach areas in Onslow, Pender, and New Hanover Counties will have greatly improved access to the Piedmont region, with New Hanover County having the best access because of I-40's termination in Wilmington, with a short distance to Wrightsville Beach. Tourism is becoming a very important part of Pender County's economy, but to take full advantage of this expanding market, Pender County will need to provide better access to Pender County beaches. Providing this improved access will be a very high priority for Pender County during the five- to ten-year planning period.

Like improved access to the beach area from I-40, the widening of US 17 and four-laning the remaining portion of NC 421 would greatly improve the efficiency of these major thoroughfares. Improvements to either NC 53 or NC 210 would provide needed improved east-west access through the County, which has been a concern for some time, as discussed in the 1981 plan.

POLICY:

County policy will be to work with the Department of Transportation to establish a four-lane thoroughfare between I-40 and

Surf City and Topsail Beach. The County will continue to work for the improvement of NC 421 and US 17 as four-lane facilities and for the improvement of NC 53 and NC 210 to improve the east-west connection of the County.

16. ISSUE: Lea Island/Hutaff Island

Lea Island and Hutaff Island have access only by boat. Because of the sensitive nature of these two islands, the County would prefer that any future development in these areas, if permitted by CAMA, Corps of Engineers, and County and Local Permit Office regulations, be of lower intensity development.

POLICY:

The County is aware that both Lea Island and Hutaff Island are located in an environmentally sensitive area and, therefore, would only encourage lower density development in the future if all local, state, and federal regulations would permit such development; as permitted by the zoning ordinance once adopted.

17. ISSUE: Water System

Both the 1976 and 1981 Land Use Plans acknowledge the fact that neither water nor sewer systems were available from the County. Specifically, the 1976 plan indicated that a "County-wide water and sewer system is far beyond the financial capability of the County and exceeds its needs." The 1976 plan also stated that providing water and sewer facilities was a municipal function.

The 1981 plan listed septic tank problems as a #1 priority problem and a County-wide water system as a #5 class priority. The plan discussed the problem of some septic tank failure and impact on water quality of the estuarine system, as well as potential pollution of the groundwater system.

The 1981 plan policy stated that because of the rural character and low density of the County, a County-wide water system was not justified; however, a study of higher density areas was justified.

Based on the results of the 1986 LUP questionnaire, the majority of those answering did not want the County to consider providing a County-wide water system. Specifically, the question was:

Do you think the County needs to consider providing a County-wide water system, if financially feasible?

Yes	176	28.9%
No	288	47.4%
Not Sure	144	23.7%
Total	608	100.0%

Based on the results of the questionnaire, there appears to be little interest in a County water system. Based on these results, concern for protection of the estuarine system, groundwater resources, and the desire to provide services that are financially feasible and desirable, the County must determine the appropriate steps to take pertaining to providing water services either in the near or distant future. However, if County officials determine that it would be in the County's best interest to develop a water system, the County will pursue federal & state grants to develop such a system. However, if County officials determine that it would be in the County's best interest to develop a water system, the County will pursue federal and state grants to develop such a system.

POLICY:

As outlined in the section headed, "Commitment to provide Services to Development," page 47, County policy will be to begin the planning process for a County water system to serve the rapidly growing areas of the County with potential for future expansion.

18. ISSUE: Rural Crime

"Crime Watch" programs are being used in communities throughout the County in an effort to help the Sheriff's Department patrol the County. Citizens of the County will be encouraged to become involved in the Crime Watch program, if they are not already.

POLICY:

It shall continue to be County policy to provide protection for County citizens and others through the County Sheriff's Department. Citizens not involved in the "Crime Watch" program will be encouraged to become involved through educational programs conducted by the Sheriff's Department.

19. ISSUE: Aesthetics

County officials are aware that a clean community projects a positive image for industry, new business, and visitors to the area. The County also knows projecting that positive image takes hard work and dedication of County citizens interested in having a cleaner, more attractive county.

POLICY:

The County will review and discuss alternative methods to establish an ongoing "clean community committee or commission" to work toward the goal of improving the visual quality of Pender County. The County will also use zoning regulations to require screening of storage areas and to control the location of billboards along major scenic highway routes.

SECTION III: LAND CLASSIFICATION SYSTEM

The land classification system provides a uniform way of looking at how the planned use of land interacts with environmentally sensitive areas and with the development of a County or Town. It is not a strict regulatory device in the sense of a zoning ordinance or zoning map. It represents more of a tool to understand relationships between various land use categories and how these relationships help shape local policy. Particular attention is focused on how intensely land is utilized and the level of services required to support that intensity. Land classification is also useful in the staging of services necessary to support development. The regulations for the Coastal Area Management Act state:

"The land classification system provides a framework to be used by local governments to identify the future use of all lands. The designation of land classes allows the local government to illustrate their policy statements as to where and to what density they want growth to occur, and where they want to conserve natural and cultural resources by guiding growth." (7B.0204) (b)

There are five general land use classifications under CAMA: Developed; Transition; Community; Rural; and Conservation. In applying the land classification system, each local government should give careful consideration to how, where and when certain types of, and intensity of "development," will be either encouraged or discouraged. A brief summary of the five broad classifications, as contained in the CAMA rules, might illustrate this. For example:

"Urban land uses and higher intensity uses which presently require the traditional urban services should be directed to lands classified developed. Areas developing or anticipated to develop at urban densities which will eventually require urban services should be directed to lands classified transition. Low density development in settlements which will not require sewer services should be directed to areas classified as community. Agriculture, forestry, mineral extraction and other similar low intensity uses and very low density, dispersed residential uses should be directed to lands classified rural. Generally, public or private water or sewer systems will not be provided in areas classified rural as an incentive for intense development." (7B.0204) (c)

The purpose of the conservation class is to "provide for the effective long-term management and protection of significant, limited, or irreplaceable areas." Consequently, urban services (whether public or private) should not be provided to those areas as an incentive to "stimulate" more intense development. Each of these classes must be represented on a Land Classification Map.

The five land classifications and Land Classification Map are therefore intended to serve as a visual reflection of the policies previously stated in Section II. Ideally, the map which depicts these classifications should be as flexible as the policies that guide them. (See attached Land Classification Map)

The five land use classifications, as they will be applied in Pender County, are identified and defined below.

A. DEVELOPED

The developed class of land use provides for continued intensive development and redevelopment of existing cities or municipalities. Areas to be classified as "developed" include lands currently developed for urban purposes or approaching a density of 500 dwellings per square mile that are provided with usual municipal or public services, police and fire protection. In other words, such areas must currently be "urban" in character, i.e. have mixed land uses such as residential, commercial, industrial and institutional, or other uses at high to medium densities. For purposes of the Pender County Land Use Plan, the municipalities of Atkinson, Burgaw, Surf City, and Topsail Beach are considered developed.

B. TRANSITION

Transition land is classified as those lands providing for future intensive urban development within the ensuing ten years on lands that are most suitable and that will be scheduled for provision of necessary public utilities and services. They may also provide for additional growth when additional lands in the developed class are not available or when they are severely limited for development.

Lands classified "transition" may include:

1. lands currently having urban services;
2. lands necessary to accommodate the population and economic growth anticipated within the planning jurisdiction over the next five to ten years;
3. areas which are in, or will be in, a "transition" state of development, i.e. going from a lower intensity to a higher intensity, of uses and will eventually require urban services.

Transition lands must further:

1. be served or be readily served by public water, sewer, and other urban services including public streets, and
2. be generally free of physical limitations for urban development.

The "transition" class should not include:

1. lands of high potential for agriculture, forestry, or mineral extraction, or land falling within extensive rural areas being managed commercially for these uses, when other lands are available;
2. lands where urban development might result in major or irreversible damage to important environmental, scientific, or scenic values, cultural resources, or;
3. land where urban development might result in damage to natural systems or processes of more than local concern; and
4. lands where development will result in undue risk to life or property from natural hazards or existing land uses.

The relationship between the "developed and transition" classification is important in predominantly rural counties like Pender. The first class is meant to define the already developed areas and/or those areas where public investment decisions will be required to provide the necessary urban services. These become important areas to closely monitor. The Coastal Resources Commission has further clarified this relationship as described below:

The Developed and Transition classes should be the only lands under active consideration by the County or municipality for intensive urban development requiring urban services. The area within these classes is where detailed local land use and public investment planning will occur. State and Federal expenditures on projects associated with urban development (water, sewer, urban street systems, etc.) will be guided to these areas. Large amounts of vacant land suitable for urban development within the Developed class should be taken into account when calculating the amount of additional lands needed to accommodate projected growth.

Transition areas include the following: along both sides of NC 53 between the Burgaw extraterritorial limits and I-40; the land area around the I-40/U.S. 117 interchange east of Willard; an area with high industrial potential between Turkey Creek and the Cape Fear River at U.S. 117/NC 133; north along both sides of U.S. 117 up to Rocky Point; along either side of U.S. 421 from its intersection with NC 210 south to the New Hanover County line; and, also, both sides of NC 210 from U.S. 117 crossing I-40, eastward to the Northeast Cape Fear River have been designated transition.

For areas where "transition" is located on both sides of a thoroughfare, the classification shall extend to 1,000 feet on either side of the road right-of-way.

The Hampstead area has experienced significant growth since the 1981 CAMA plan was completed, and this area will most likely continue to grow. Portions of the Hampstead area has been designated as transition. Both sides of NC 210 at the entrance to Surf City and extending approximately one-half mile along NC 210 has been classified transition. Also, the waterfront area along NC 1538 west of NC 210 near the Surf City Bridge has been designated transition. This transition area would not include any waterfront property classified as conservation, and the final determination of any potential conservation areas would be made based on a field inspection by the appropriate regulatory agency.

C. COMMUNITY

The "Community" classification provides for clustered land uses to meet housing, shopping, employment, and public service needs within the rural areas of the County. It is usually characterized by a small grouping of mixed land uses which are suitable and appropriate for small clusters of rural development not requiring municipal sewer service.

The "Community" classification includes Penderlea, Willard, Currie, Scotts Hill, Maple Hill, Washington Acres, Deerfield, and the Watts Landing area.

D. RURAL

The "Rural" class provides for agriculture and forest management, mineral extraction and other low intensity uses on large sites including residences where urban services are not required and where natural resources will not be unduly impaired. These are lands identified as appropriate locations for resource management and allied uses; land with high potential for agriculture, forestry or mineral extraction; lands with one or more limitations that would make development costly and hazardous; and land containing irreplaceable, limited, or significant natural, recreational or scenic resources not otherwise classified.

The majority of land within Pender County falls within the "Rural" classification. This classification is very important in Pender County, because of the economic importance of agriculture and forestry activities.

Addition 1: The majority of land within Pender County falls within the "Rural" classification. This classification is very important in the County because of the economic importance of agriculture and forestry activities. In addition to agriculture and forestry, there may be areas within the "Rural" classification suitable for industry. Decisions as to an area or site being suitable would depend upon criteria developed by the County, and state/federal regulation. Preliminary investigations by the County's Economic and Planning offices will determine if a proposed industry meets this criteria and regulations. If not, recommendation for the needed corrections would be made. These investigative reports will be presented to the Pender County Commissioners for a decision following a formal notice of public hearing to be advertised at least two weeks prior to the hearing.

The "Rural" classification includes all of the County not designated "community," "conservation," "transition," or the four municipalities of Atkinson, Burgaw, Surf City, and Topsail Beach.

E. CONSERVATION

The final land use category, according to CAMA guidelines, is the "Conservation" class, which provides for effective long-term

management of significant, limited, or irreplaceable resources. However, beyond the presence of AECs, other areas within the County, because of natural, cultural, recreational, productive, or scenic value, may also require similar "effective long-term management." Examples could include major wetlands (other than statutorily defined coastal wetlands); essentially undeveloped shorelines that are unique, fragile, or hazardous for development; lands that provide necessary habitat conditions (especially for remnant species) or publicly-owned water supply watersheds and aquifers.

The designation "Conservation" should not be misconstrued to imply "non-use," but does imply a need for careful and cautious management of any allowable use. For example, within a "conservation" area, there may be high ground areas which are suitable for "development," in which case development should be allowed to take place under carefully managed conditions. The term "preservation," on the other hand, implies total restriction on all uses. Within lands designated Conservation, each proposal, or application for any "developed" use will be reviewed on a case-by-case basis.

AEC areas, soils subject to flooding, and large natural areas, such as Angola Bay Gameland and Holly Shelter Gameland, are included in the conservation class. The overall premise for the designation "Conservation" in Pender County will be to strike the delicate balance between careful long-term management of sensitive or valuable resources and the freedom of landowners to utilize their properties.

Since, as stated previously, "Conservation" does not imply "Preservation," specific allowable uses in the Conservation class shall include:

1. Drainage: Adequate drainage as permitted by County, State, and Federal regulations.
2. Low density residential development in accordance with future zoning ordinance, and as allowed by County, State, and Federal regulatory agencies. However, water and/or sewer services will not be extended to such a residential area.
3. Water-oriented uses such as piers and docks, and bulkheads, if they are shown not to cause detriment to estuarine waters and riverine waters or the Conservation lands and if permitted by County, State, and Federal regulations.

4. Necessary utility service lines, such as water, sewer, electrical, natural gas, etc., when it is demonstrated that the ecological system of the Conservation area will not be adversely altered.
5. Roadways, when construction of roadways can be conducted without adversely altering the ecological system, and in compliance with existing federal, state, and local regulations.
6. Timber harvesting.
7. Barge landings.
8. Marinas (in compliance with Federal, State, and County Regulations).

The conservation areas of Pender County include all soils in the County that are subject to flooding,* as designated by the Soil Conservation Service in Burgaw using the recently completed detail soils survey maps of the County, or as defined by the Federal Emergency Management Agency, specifically, land area susceptible to being inundated by water from any source which is a general and temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland or tidal waters. In addition to soil types subject to flooding, the "Conservation" classification includes all CAMA-regulated areas of environmental concern, as discussed in the 1986 Land Use Plan and Flood Insurance Plan, as applicable to Pender County.

In conjunction with the Policy Statements section of this Plan, each application for a "developed" use in the Conservation classification, shall be brought before the County Planning Board and reviewed on a case-by-case basis prior to approval. The County Planning Board may recommend modification of the Proposal.

The development proposal shall include the location of the site on a detail soils map of the area, which can be obtained from the Soil Conservation Service office in the County Administrative Building in Burgaw, North Carolina.

*Specific soil types included in conservation area are:

Bohicket Silty Clay Loam
Carteret Fine Sand
Chewacla Loam
Croatan Muck
Dorovan Muck
Muckalee Loam

Storm Hazard Mitigation, Post-Disaster Recovery, and
Evacuation Plans

The entire North Carolina Coastal region, including Pender County, faces strong threats of damage each year from hurricanes, Northeasters, or other major storms. For nearly 20 years, there was a marked "slowdown", or "lull", in hurricane activity along the State's coast. Predictions were that a major storm could strike the State at any time during the hurricane season, since such a storm was "long overdue". And then, in September, 1984, the "waiting" ended. Hurricane Diana, with some of the strongest sustained winds ever recorded, rammed into the Southeast coast near Wilmington. Although damage was extensive, the potential destruction was much greater and the damage would have been greatly escalated had the storm hit land at a slightly different location. This time the State and the Southeast coastal area were relatively fortunate. Next time the coastal area may not be as fortunate.

Notice the excerpt below from, Before the Storm: Managing Development to Reduce Hurricane Damages, McElyea, Brower, & Godschalk, 1982, concerning development in coastal communities:

"At the same time, development along the coast has grown by leaps and bounds. Unless this development is wisely located and built to withstand hurricane forces, North Carolina's coastal communities will face massive destruction. Local governments, as the primary protectors of the public health, safety, and general welfare, have a responsibility to reduce the risk of property damages and loss of life attending coastal development. They also have a responsibility to ensure that reconstruction following a major storm can occur quickly and leave the community safer from disaster in the future. These are the goals of a hazard mitigation and reconstruction planning." (p.iii)

The purpose of this section of the 1986 CAMA Land Use Plan Update is to assist Pender County in managing development in potentially hazardous areas, in cooperation with the communities of Topsail Beach and Surf City, by establishing hazard mitigation policies to reduce the risks associated with future hurricanes. By developing post-disaster reconstruction/recovery policies, and reviewing the adequacy of current evacuation plans, the County will hopefully reduce the risks associated with future hurricanes.

"Hazard mitigation includes any activity which reduces the probability that a disaster will occur or minimizes the damage caused by a disaster. Hazard mitigation includes not only managing development, in cooperation with the two coastal communities in Pender County, but also evacuation planning and other measures to reduce losses of life and property. Reconstruction involves the full range of repair activities

in the wake of a disaster which seek to return the community to a "normal" level of operations." (McElyea, Brower, & Godschalk, p.iii).

With this introduction, the following pages will present the storm hazard mitigation and post-disaster recovery policies, and review of the existing evacuation plan along with appropriate discussions and maps.

1. Storm Hazard Mitigation: Discussion

Hazard mitigation, or actions taken to reduce the probability or impact of a disaster could involve a number of activities or policy decisions. The starting point, however, is to identify the types of hazards (including the relative severity and magnitude of risks), and the extent of development (including residential, commercial, etc.) located in storm hazard areas.

Hurricanes are extremely powerful, often unpredictable forces of nature. The two most severe effects are fatalities and property damage, which are usually the result of four causes: high winds, flooding, wave action, and erosion, each of which are discussed briefly below:

a. High Winds

High winds are the major determinants of a hurricane, by definition, i.e., a tropical disturbance with sustained winds of at least 73 miles per hour. Extreme hurricanes can have winds of up to 165 miles per hour, with gusts up to 200 miles per hour. These winds circulate around the center or "eye" of the storm. Although the friction or impact of the winds hitting land from the water causes some dissipation of the full force, there is still a tremendous amount of energy left to cause damage to buildings, overturn mobile homes, down trees and powerlines, and destroy crops. Also, tornadoes can often be spawned by hurricane wind patterns. Wind stress is an important consideration in storm hazard mitigation planning. Because of a hurricane's size and power, it is possible that all of Pender County would be subject to the same wind velocity in the event of a storm.

b. Flooding

Flooding, on the other hand, may not affect all areas with equal force. The excessive amounts of rainfall and the "storm surge" which often accompany hurricanes can cause massive coastal and riverine flooding causing excessive property damage and deaths by drownings. (More deaths are caused by drowning than any other cause in hurricanes.) Flooding is particularly a problem in ocean coastal areas because of the storm surge and low-lying areas. However, flooding can cause extensive damage in inland areas also, since many coastal areas have low elevations and are located in high hazard or "Zone A" flood areas according to the Federal

Emergency Management Agency Maps. The County Planning Department has chosen to use the detail soil maps of the County, prepared for the Soil Conservation Service, to designate soils subject to flooding, and this has been reflected on the Land Classification Map as part of the conservation area.

Flooding can not only cause damage to buildings, but salt-water flooding can cause serious damage to croplands. Consideration of potential flood damage is important to Pender County's efforts to develop storm mitigation policies.

c. Wave Action

Damage from wave action is connected very closely to the storm surge, i.e., wind-driven water with high waves moving to vulnerable shoreline areas. Areas most likely to be affected are ocean hazard areas and estuarine shoreline areas. There are extensive estuarine shoreline areas (75 feet inland from the mean high water mark of estuarine waters) in the County and ocean hazard areas along the outer banks. Wave action damage would have the most significant impact along the Atlantic Ocean beach front and Sound shoreline. As the existing land use map and the Flood Hazard Boundary Map show, there is a significant amount of residential development in or near the estuarine shoreline area and developed continuing at Topsail Beach and Surf City. Wave action can cause erosion as well as push possible flood waters to areas not reached by the storm surge itself. The estuarine shoreline along Pender County's riverine shores are sufficiently inland from an open coast so that the wave energy is dispersed and diffracted, mainly by the proximity to forested areas.

d. Erosion

The final major consideration in storm hazard mitigation is severe erosion, caused by high winds, high water, and heavy wave action. Again, in Pender County, the area most susceptible to storm-related erosion is the estuarine shoreline AEC along the Sound and the ocean front areas of Topsail Beach and Surf City. This is essentially the same area potentially affected by the action of damaging waves and described in part c, above. Shoreline erosion could lead to loss of property through portions of waterfront lots being washed into the Sound and ocean or even actual structural damage to buildings. Erosion potential is an important factor to consider in developing storm hazard mitigation policies.

e. Summary: Storm Hazard Mitigation Considerations

In summary, all four of the major damaging forces of a hurricane, i.e., high winds, flooding, wave action, and shoreline erosion could have a potential impact upon Pender County in the event of a major storm. The degree of susceptibility to losses and/or damages was generally alluded to in the previous discussions. However, Table XVII provides a better projection of the percent of the County's building structures (residential and commercial, etc., subject to the potentially devastating effects of a major storm:

Table XVII *Percent of Structures Subject to Storm Damage Factors, Pender County

<u>Storm Impact</u>	<u>Percent Structures Possibly Affected</u>
1. High winds	See Surf City and Topsail Beach LUP
2. Flooding	
3. Wave Action	See Surf City and Topsail Beach LUP

*Based on preliminary estimates derived from examination of the 1986 Existing Land Use Maps for Pender County and soil types subject to flooding, as provided by the Soil Conservation Service office in Burgaw.

The information in the Table above is an estimate and is not intended to convey the impression that every single structure possibly affected by damaging flooding would be affected, only that the potential is there. Storm impact from high wind and wave action would be covered in the Surf City and Topsail Beach LUP's. Knowing that the potential is there forms the basis for setting forth storm hazard mitigation policies, keeping in mind that "mitigate" means actions which may reduce the probability of disaster, or minimize the damage caused by a disaster (McElyea, Brower, & Godschalk, p. iii).

f. Policy Statements: Storm Hazard Mitigation

In order to minimize the damage potentially caused by the effects of a hurricane or other major storm, Pender County proposes the following policies.

1. High Winds

Pender County enforces the N. C. State Building Code, particularly requirements of construction standards to meet wind-resistive factors, i.e., "design wind velocity". The County also enforces provisions in the State Building Code requiring tie-downs for mobile homes, which help resist wind damage.

2. Flooding

Pender County is supportive of the hazard mitigation elements of the National Flood Insurance Program. Pender County also supports continued enforcement of the CAMA and 404 Wetlands development permit processes in areas potentially susceptible to flooding.

3. Wave Action and Shoreline Erosion

Pender County is supportive of the CAMA development permit process for estuarine shoreline areas and the requisite development standards which encourage both shoreline stabilization and facilitation of proper drainage. The County is aware of potential overwash areas at Topsail Beach and Surf City, and these areas should be identified in the Topsail Beach and Surf City CAMA plans.

g. Implementation: Storm Hazard Mitigation

1. Pender County has adopted an Emergency Management Hurricane Response Plan, which requires coordination with both Topsail Beach and Surf City.
2. The County will continue to support enforcement of State and Federal programs which aid in mitigation of hurricane hazards, including CAMA and the U. S. Army Corps of Engineers 404 permit process.
3. The County is presently working on adoption of both subdivision regulations and zoning ordinance. Both of these planning tools will be used to direct growth away from storm hazard areas.

3. Post-Disaster Reconstruction Plan

Pender County recognizes that in the event of a major storm, it will be very important to have, at a minimum, a general recovery and reconstruction plan. This section of the Land Use Plan Update will address this issue.

a. Appointment of a "Post Disaster Recovery Team"

In the event of a major storm having landfall in the vicinity of Pender County, when evacuation orders are issued, the Chairman of the County Board of Commissioners shall appoint a "Post-Disaster Recovery Team". This team shall consist of all of the members of the Control Group and Support Group as identified in the Pender County Emergency Management Hurricane Response Plan, and others whom the Chairman may appoint. The total team may consist of the following:

1. The Chairman of the Pender County Board of Commissioners
2. Group Chairman
3. The Mayors or their representatives of:
 - Surf City
 - Topsail Beach
 - Burgaw
 - Atkinson
4. The Pender County Emergency Management Coordinator - Advisor
5. The County Attorney - Legal Advisor
6. County Finance Officer - Group Chief of Support Group
7. Sheriff
8. Director of Social Services
9. Superintendent of Schools
10. County Health Director
11. County Tax Supervisor
12. Burgaw Fire Chief
13. County Public Information Officer
14. Rescue Squad Representative
15. State Highway Patrol Liaison Officer
16. Red Cross Liaison Officer
17. Building Inspection Department
18. Local and State CAMA Permit Officers

The Emergency Management Coordinator will serve as the Group Leader. The base of operations will be the Emergency Operations Center (EOC) identified in the County Evacuation Plan. The Disaster Recovery Team will be responsible for the following:

1. Establishing an overall restoration schedule.
2. Setting restoration priorities.
3. Determining requirements for outside assistance and requesting such assistance when beyond local capabilities.
4. Keeping the appropriate County and State officials informed.
5. Keeping the public informed.
6. Assembling and maintaining records of actions taken and expenditures and obligations incurred.
7. Recommending to the Chairman of the Board of Commissioners to proclaim a local "state of emergency" if warranted.
8. Commencing and coordinating cleanup, debris removal and utility restoration which would include coordina-

tion of restoration activities undertaken by private utility companies.

9. Coordinating repair and restoration of essential public facilities and services in accordance with determined priorities.
10. Assisting private businesses and individual property owners in obtaining information on the various types of assistance that might be available to them from federal and state agencies.

b. Immediate Clean-Up and Debris Removal

As soon as practical after the storm, the Disaster Recovery Team will direct appropriate County personnel, in cooperation with Topsail Beach and Surf City municipal personnel, and as necessary, request State and/or federal assistance to begin clearing fallen trees and other debris from the County and municipal roads and bridges.

c. Long Term Recovery/Restoration

The Disaster Recovery Team will be responsible for overseeing the orderly implementation of the reconstruction process after a major storm or hurricane in accord with the County's policies. The County would contact State and Federal agencies to request financial assistance to repair or reconstruct damaged or destroyed property.

1. Damage Assessments

Damage assessments will be necessary to determine as quickly as possible a realistic estimate of the amount of damage caused by a hurricane or major storm. Information such as the number of structures damaged, the magnitude of damage, and the estimated total dollar loss will need to be developed.

As soon as practical after the storm, i.e., clearance of major highways and paved roads in the County, the Disaster Recovery Team Leader shall set up a Damage Assessment Committee (DAC), consisting of the Building Inspector, Emergency Management Coordinator, a local realtor or building contractor, and appropriate personnel from the Pender County tax department. The DAC will immediately begin to make "windshield" surveys of damaged structures to initially assess damages and provide a preliminary dollar value of repairs or replacement. The following general criteria shall be utilized:

- a. Destroyed (repairs would cost more than 80 percent of value).
- b. Major (repairs would cost more than 30 percent of the value).
- c. Minor (repairs would cost less than 30 percent of the value, but the structure is currently uninhabitable).
- d. Habitable (some minor damage, with repairs less than 15 percent of the value).

Each damage assessment will be documented according to County tax records. Also, County tax maps (including aerial photographs) and/or records may be used for identification purposes). The total estimated dollar value of damages will be summarized and reported to the Disaster Recovery Team Leader.

2. Reconstruction Development Standards

Reconstruction shall be held at least to the same standards as before the storm. However, developed structures which were destroyed and which did not conform to the County's storm hazard mitigation policies, i.e., with basic measures to reduce damage by high winds, flooding, wave action or erosion, must be redeveloped according to those policies. In some instances, this may mean relocation of construction, or no reconstruction at all. Building permits to restore destroyed or damaged structures, which were built in conformance with the State Building Code and County storm hazard mitigation policies, shall be issued automatically, all structures suffering major damage will be repaired according to the State Building Code. All structures suffering minor damage, regardless of location, will be allowed to be rebuilt to the original condition prior to the storm. The County Sanitarian and Building Inspector will consider permitting reconstruction (between 30-80% of value of damaged homes requiring a septic tank) on a case by case basis if soil type does not meet current septic tank requirements as of the date damage or destruction occurred.

Development Moratoria

Pender County, because of a lack of densely populated areas, does not foresee the need to prohibit any and all development for any specified period of time, unless prohibited by applicable State or Federal regulations. Residents shall be allowed to proceed

with redevelopment and reconstruction as soon as practical and in accord with the various levels of State and federal disaster relief provided to them. The Disaster Recovery Team will coordinate with the State Building Association and other home construction organizations in assembling a list of qualified contractors interested in assisting with reconstruction.

4. Repair/Reconstruction Schedule

The following schedule of activities and time frame are proposed with the realistic idea that many factors of a hurricane may render the Schedule infeasible.

Activity	Time Frame
a) Appoint Damage Assessment Committee	6 hours after storm
b) Complete and Report Damage Assessments	Two weeks after storm
c) Begin Repairs to Critical Utilities and Facilities	As soon as possible after storm
d) Permitting of Reconstruction activities for all damaged structures ("minor" to pre-storm original status, "major" to State building code and hazard mitigation standards)	Two weeks after damage assessments are complete

5. Agency Responsible for Implementation

The Chairman of the Pender County Board of Commissioners, as chief elected official of the County, will serve as overall Chairman of Control Group. The Board Chairman will delegate the oversight of the reconstruction and recovery effort and implementation of the plan.

6. Repair and Replacement of Public Utilities

Repair and replacement of public utilities at Topsail Beach and Surf City will be the responsibility of those municipalities.

4. Hurricane Evacuation Plan

Pender County has an official "Emergency Management and Hurricane Response Plan," which was prepared in March 1984. A brief review of this plan indicates that it is generally adequate.

Relationship of Policies and Land Classification

As discussed in the data collection and analysis section of the Land Use Plan, Pender County has been and remains a very rural county. Based on 1983 estimates, Pender County had a population density of 26.7 people per square mile, which is very low; however, portions of the County have been and continue to experience a significant amount of development, particularly along the eastern mainland area between US 17 and the Intracoastal Waterway.

The primary policy adopted by Pender County and the one that will have the greatest impact on future land use is the policy to prepare and adopt both subdivision regulations and a zoning ordinance. Also, the policy to begin the planning process to provide water and/or sewer service in rapidly growing areas of the County will impact on future development. Currently, the land use policy is to permit development in the County if the proposed development meets all Local, State, and Federal regulations. Upon approval of the zoning ordinance, the County will have a better planning tool to direct future growth.

To reflect these policies on the Land Classification Map, the County has designated the area along both sides of NC 53 between Burgaw at US 117 and I-40 as a transition area. Also, both sides of NC 210 between I-40 and SR 1518 have been designated as transition due to the anticipated growth generated by the interstate highway, the technical school planned for the area, and new industry planned for the area.

The Hampstead area has experienced significant growth since the 1981 CAMA plan was completed, and this area will most likely continue to grow. All of the Hampstead area has been designated transition. Both sides of NC 210 at the entrance to Surf City and extending approximately one-half mile along NC 210 have been classified as transition. Also, the waterfront area along NC 1538 west of NC 210 near the Surf City Bridge has been designated transition. This transition area would not include any waterfront property classified as "Conservation," and the final determination of any potential conservation area would be made based on a field inspection by the appropriate regulatory agency.

The "Community" classification includes Penderlea, Willard, Carrie, and Maple Hill.

The "Rural" classification includes all of the County not designated transition, community, conservation, or the four municipalities of Atkinson, Burgaw, Surf City, or Topsail Beach.

The conservation area includes all soils in the County that are subject to flooding, as designated by the Soil Conservation Service in Burgaw using the recently completed detail soils survey

maps of the County. In addition to soil types subject to flooding, the "Conservation" classification includes all CAMA-regulated areas of environmental concern, as discussed in the 1986 Land Use Plan and as applicable to Pender County.

Public Participation

During the early planning stages, the Pender County Planning Board held two public information meetings, one in Burgaw and one in Hampstead. During these meetings, the Planning Director, Planning Board Chairman, and consultant discussed the purpose of the Land Use Plan Update and received comment on local issues. The Hampstead meeting was attended by over 100 interested citizens. During the following months, the Planning Board held several work sessions which were attended by interested citizens. The Land Use Plan Update has also been on the agenda for regular Planning Board meetings. In addition to public information meetings and regular Planning Board meetings as a means to have input into the planning process, the Planning Board prepared and distributed over 5,000 planning questionnaires and distributed them through the schools and two County libraries. Planning questionnaire responses were tabulated and information used in preparing the Land Use Plan Update.

Public participation will continue following submittal of the draft plan to the Coastal Resources Commission for review and comment. Following that review, the plan will be presented at a public hearing for review and comment by Pender County citizens prior to formal adoption. Following adoption of the plan, it may be modified or amended during the subsequent five-year planning period, as the need for such amendment may require.

The following public information meetings and Planning Board meetings were open to the public:

October 23, 1985
January 24, 1986
February 10, 1986 (Burgaw Public Info. Meeting)
February 17, 1986 (Hamstead Public Info. Meeting)
February 27, 1986
March 20, 1986
July 3, 1986
August 23, 1986
November 17, 1986
January 12, 1987
January 19, 1987 (County Commissioners)

APPENDIX

APPENDIX

SOIL SURVEY IDENTIFICATION LEGEND

PENDER COUNTY, NORTH CAROLINA

Locally Important Farmlands

AuB(BnB)	Autryville fine sand, 1 to 4 percent slopes
BaB(BmB)	Baymeade fine sand, 1 to 4 percent slopes
Gr	Grantham loam
Gr	Grifton loamy fine sand
InA(In)(Ip)	Invershiel-Pender complex, 0 to 2 percent slopes
KeB	Kenansville fine sand, 0 to 4 percent slopes
Ls(Li)	Liddell silt loam
Lu	Lumbee fine sandy loam, occasionally flooded
Pa	Pactolus fine sand, occasionally flooded
Pn	Pantego mucky fine sandy loam
Ra	Rains fine sandy loam
To(Px)	Torhunta mucky fine sandy loam
Wo	Woodington fine sandy loam

APPENDIX
SOIL SURVEY IDENTIFICATION LEGEND
PENDER COUNTY, NORTH CAROLINA

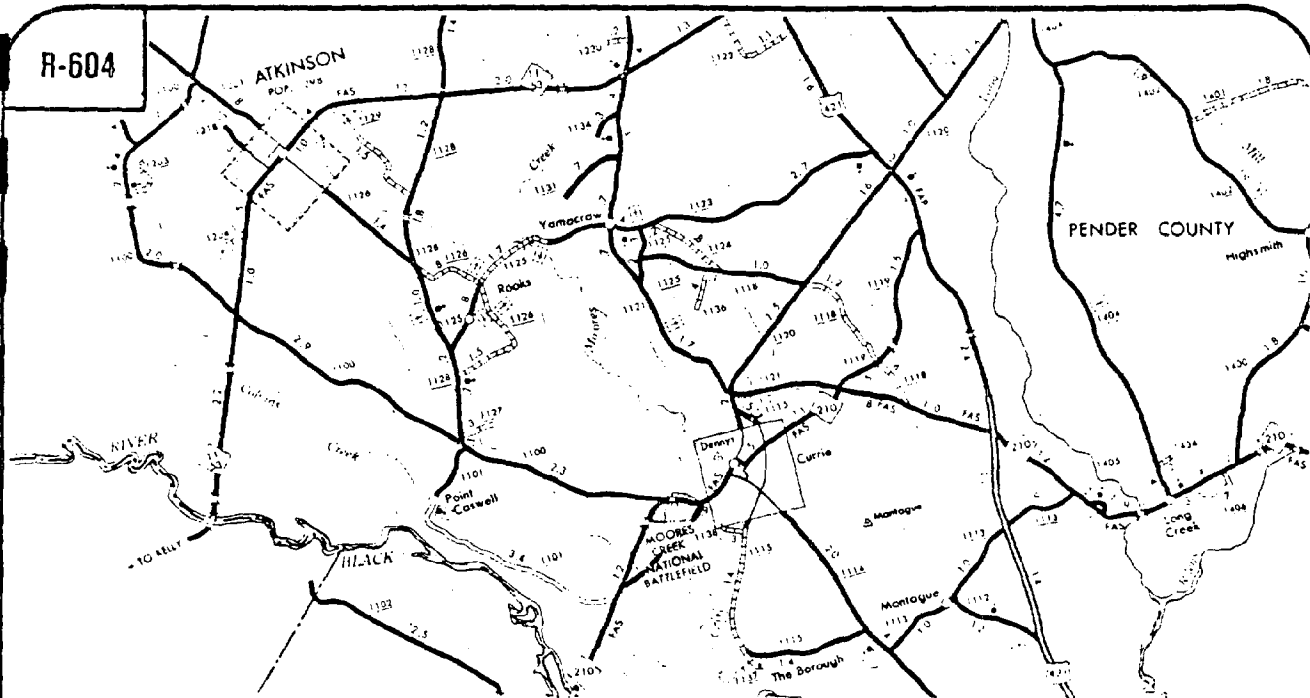
Prime Farmland

AtA	Altavista fine sandy loam, 0 to 3 percent slopes
AyA	Aycock loam, 0 to 3 percent slopes
AyB2	Aycock loam, 3 to 6 percent slopes, eroded
EmA(ExA)	Exum loam, 0 to 2 percent slopes
EuA(EU)(ExU)	Exum-Urban land complex, 0 to 2 percent slopes
Fo(FoA)	Foreston loamy fine sand
GoA	Goldsboro fine sandy loam, 0 to 2 percent slopes
Jo	Johns fine sandy loam
KaA(Ka)	Kalmia loamy fine sand, 1 to 3 percent slopes
McC(CrC2)(CrC)(MaC)	Marvyn and Craven soils, 6 to 12 percent slopes
NoA	Norfolk loamy fine sand, 0 to 2 percent slopes
NoB	Norfolk loamy fine sand, 2 to 6 percent slopes
On	Onslow loamy fine sand

1986-95

**TRANSPORTATION
IMPROVEMENT PROGRAM**

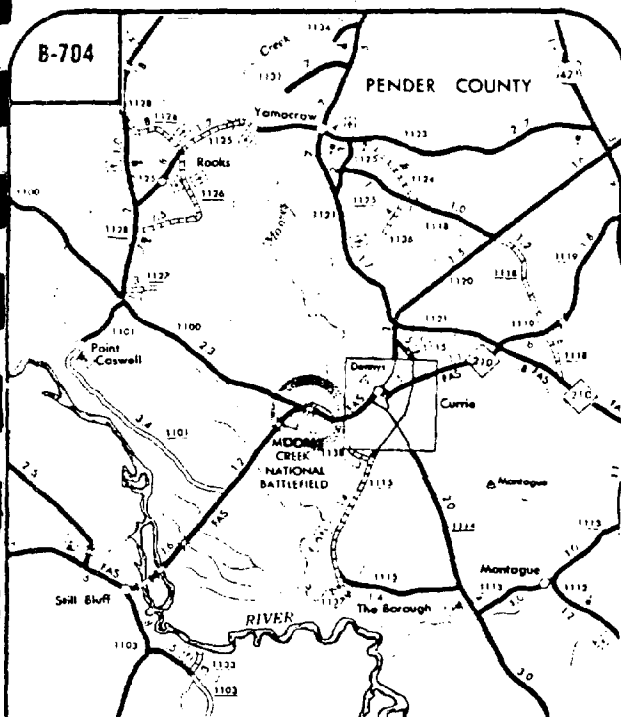
R-604



NC 210, MOORE'S CREEK NATIONAL MILITARY BATTLEFIELD,
PENDER COUNTY
Two lane facility on new location.



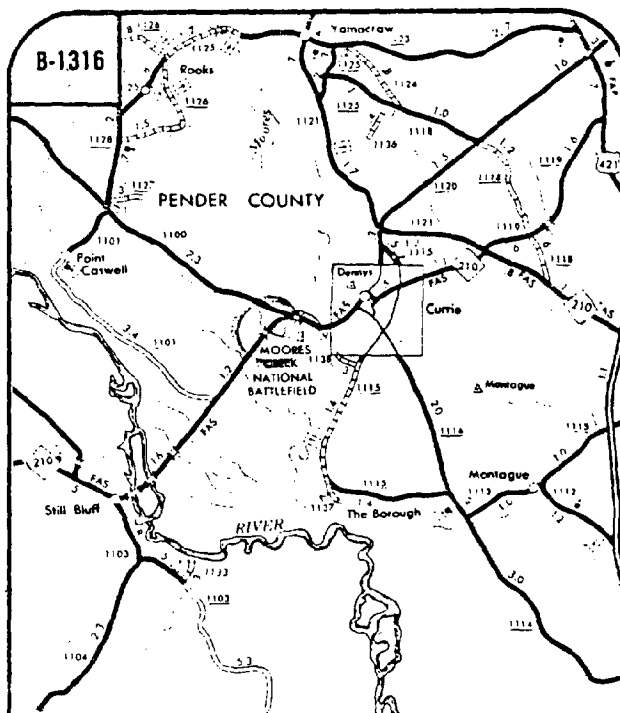
B-704



NC 210, BRIDGE #31, PENDER COUNTY
Replace bridge over Moores Creek.

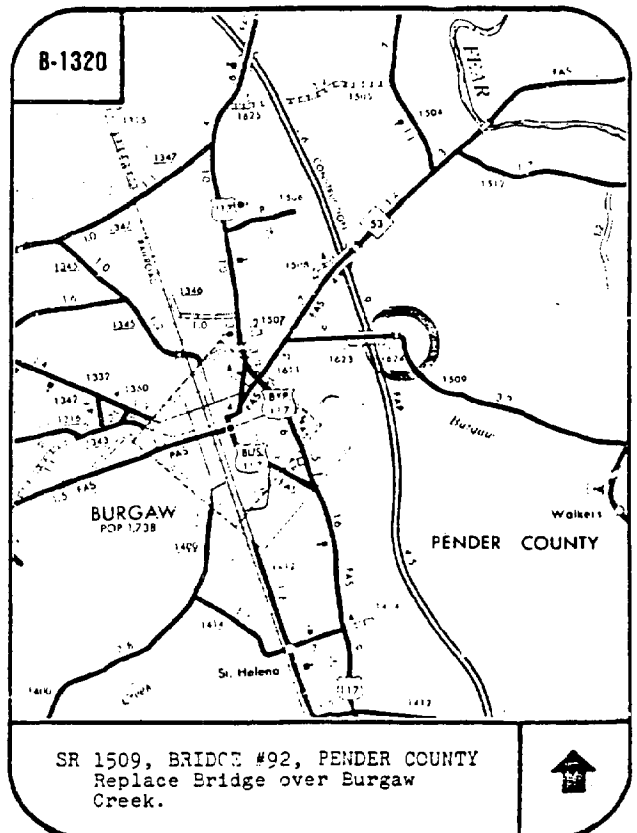
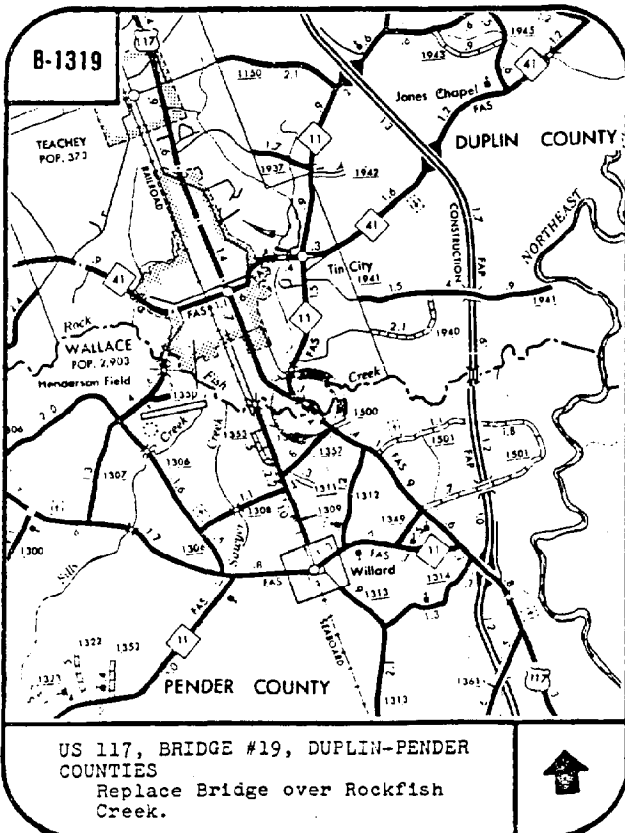
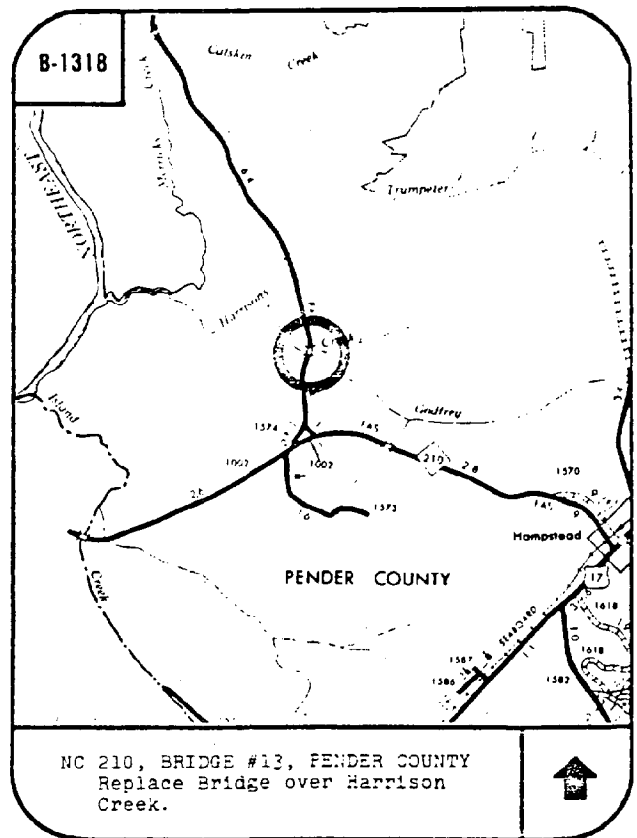
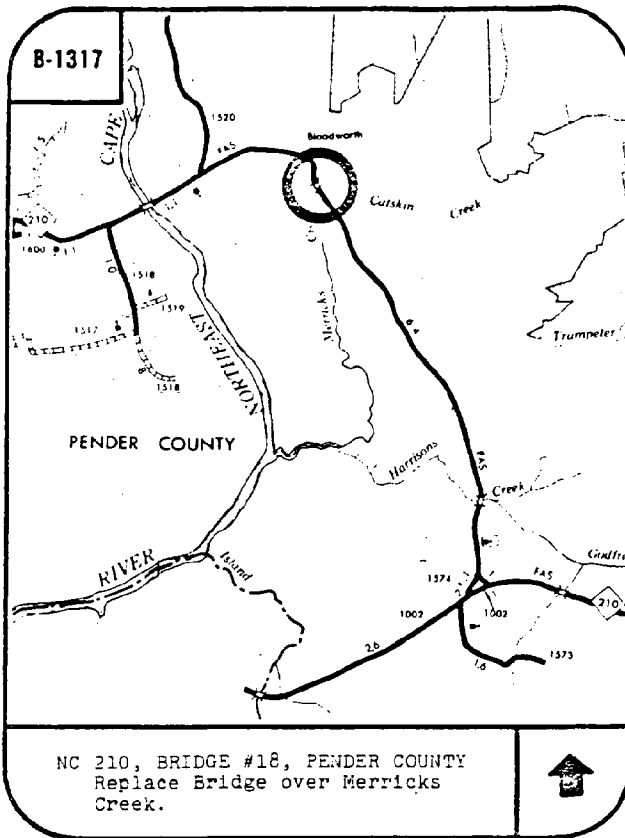


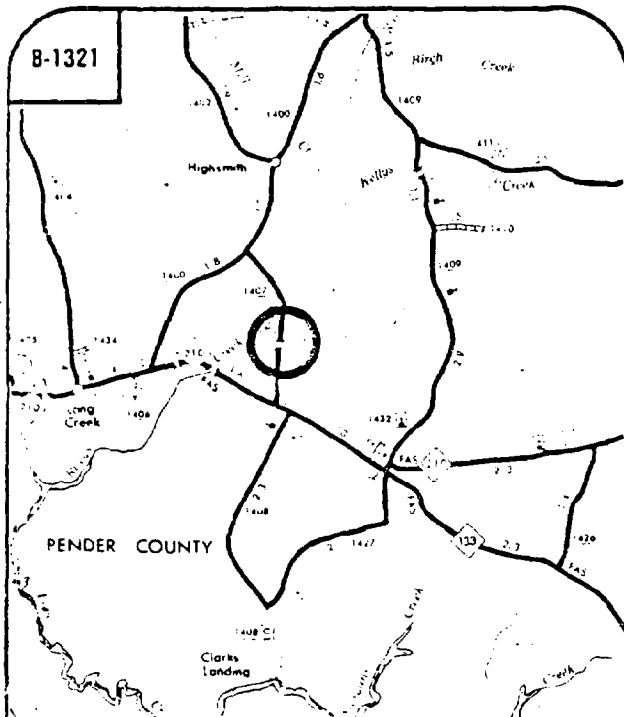
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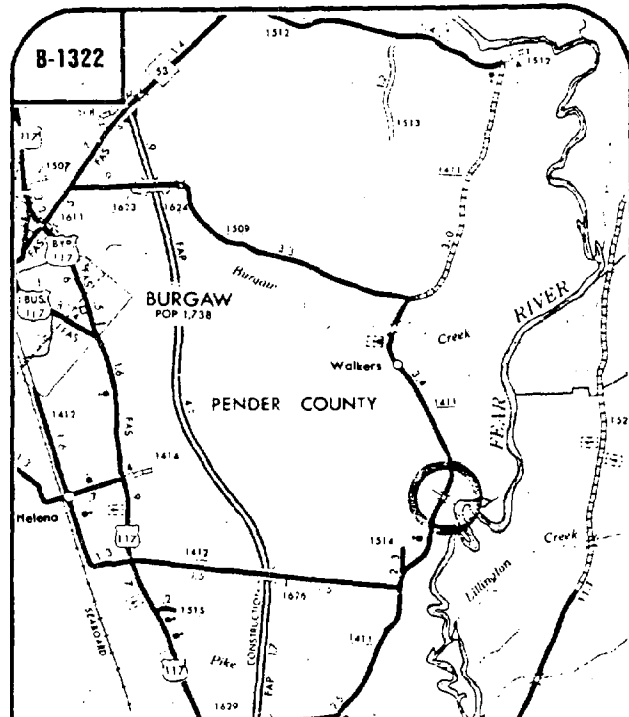
NC 210, BRIDGE #35, PENDER COUNTY
Replace Bridge over Moores Creek
Overflow.



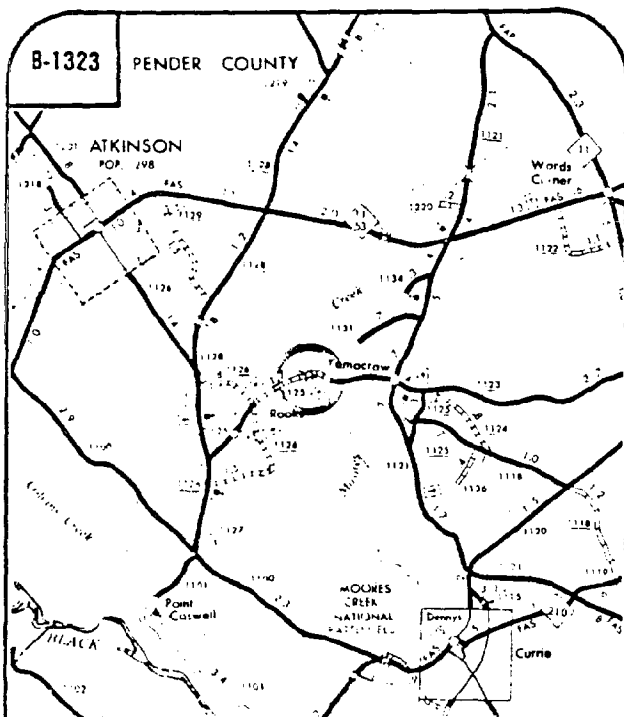




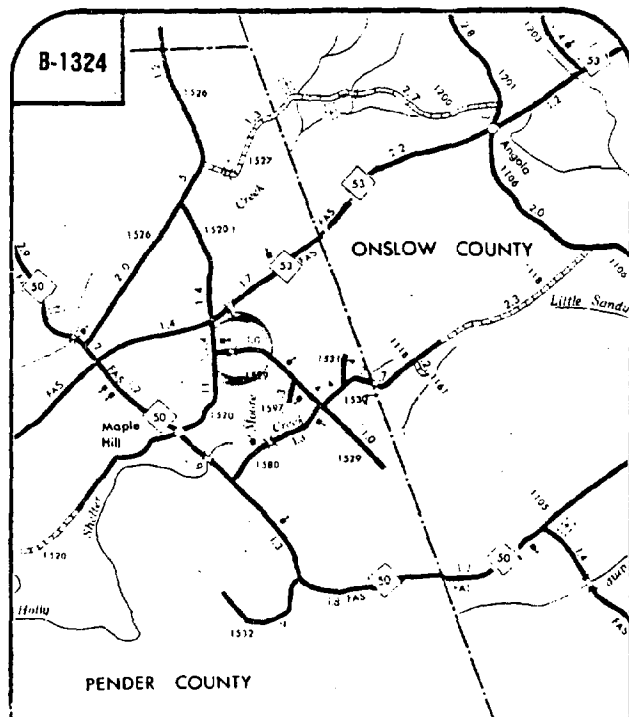
SR 1407, BRIDGE #87, PENDER COUNTY
Replace Bridge over Rileys
Creek.



SR 1411, BRIDGE #90, PENDER COUNTY
Replace Bridge over Branch of
Northeast Cape Fear River.

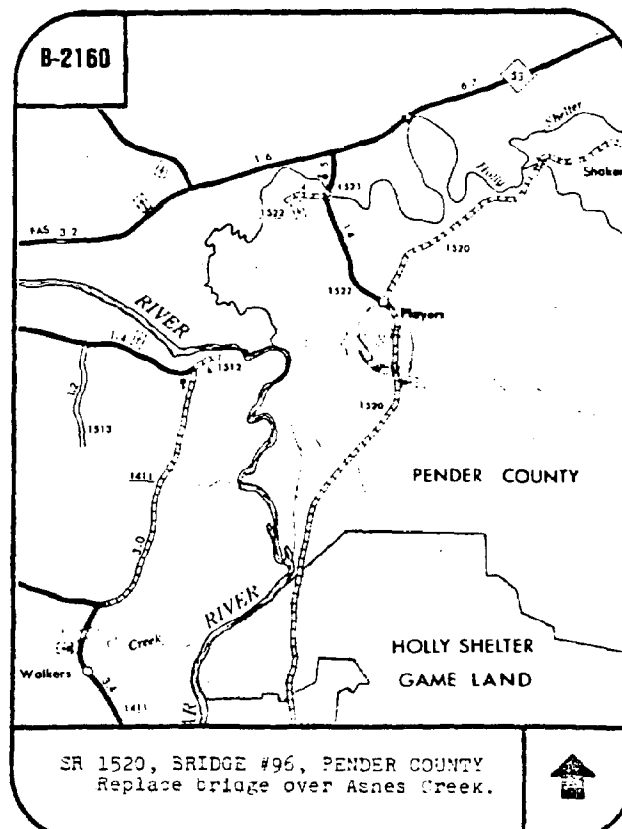
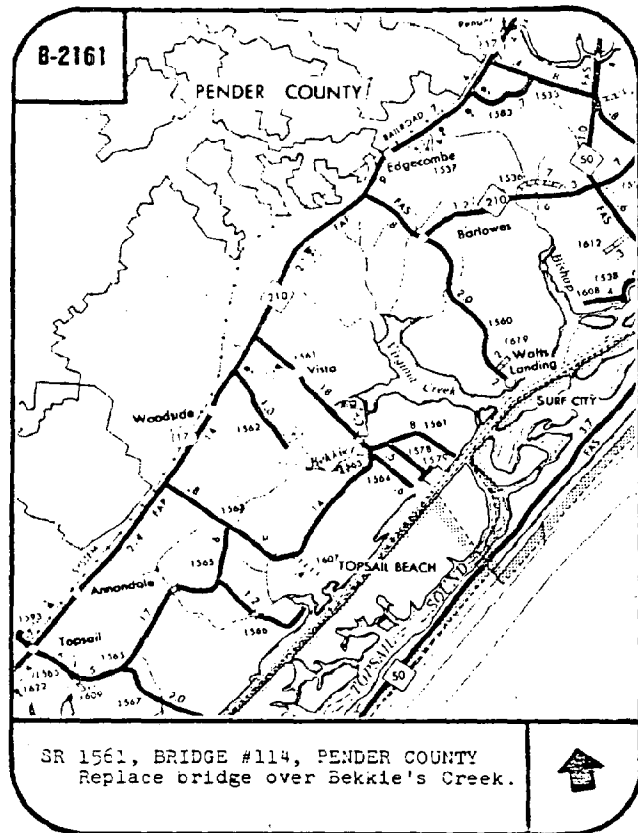
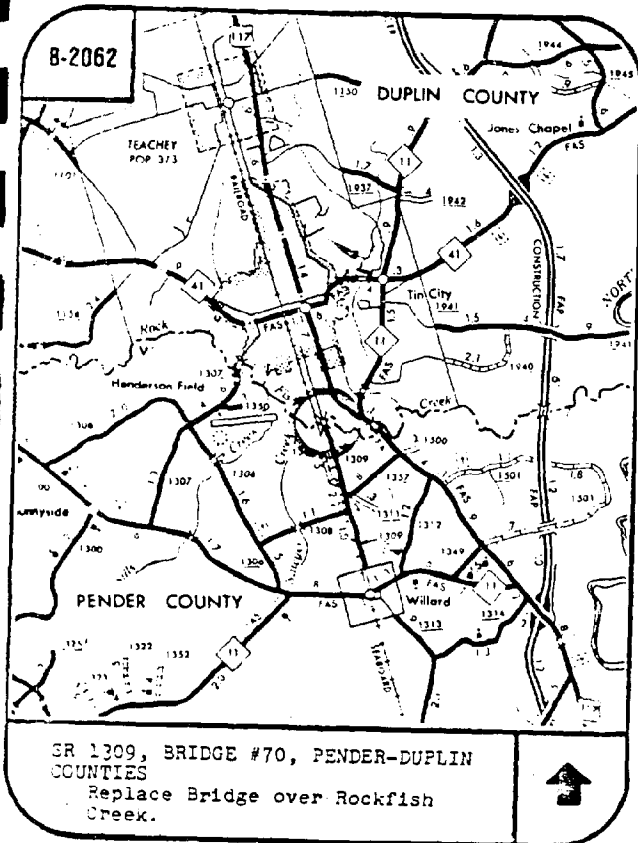


SR 1125, BRIDGE #33, PENDER COUNTY
Replace Bridge over Moore's
Creek.



SR 1529, BRIDGE #141, PENDER COUNTY
Replace Bridge over Moore's
Creek.





TALBERT, COX & ASSOCIATES, INC.
6527 NEW PEACHTREE ROAD
ATLANTA, GEORGIA 30340

JAN 19 1987

TRANSMITTAL LETTER

TO: City of Norwell
Recreation and Public Dept.
Norwell, Ga.

DATE: Jan. 14, 1987

JOB NO: 1574. 402 B

ATTENTION: Bill Johnson

JOB: Waller Park - Areas I + II

Dear Sir: We are sending you this
date the following:

☐ ARCHITECTURAL DRAWINGS

☐ SHOP DRAWINGS

☐ ENGINEERING DRAWINGS

☐ ADDENDA

☐ SAMPLES

☒ Addenda

Transmitted by:

☒ OUR MESSENGER

☐ FIRST CLASS MAIL

☐ YOUR MESSENGER

☐ AIR MAIL

☐ EXPRESS

☐ SPECIAL DELIVERY

☐ PARCEL POST

☐ SPECIAL HANDLING

☐ BUS

ORIGINAL SUBJECT MATTER	DRAWING NUMBER	LAST DATE	COPIES EACH	REMARKS
Talbert, Cox & Assoc.	ADD. 1 - Area I	1/14/87	20	
	ADD. 1 - Area II	1/14/87	20	

NOTE: A - Shop drawings marked "REVIEWED NO EXCEPT" give authority to proceed with the work as shown, subject to the requirements of the plans and specifications.

B - Shop drawings marked "MAKE CORR. NOTED" give authority to proceed in accordance with notes, but corrected prints must be submitted. Only drawings without notes shall be used for erection work in the field.

C - Shop drawings marked "AMEND AND RESUBMIT" and "REJECTED-RESUBMIT" do not give authority to proceed with any portion of the work shown thereon.

cc:

Howard Capps

Very truly yours,
TALBERT, COX & ASSOCIATES, INC.

BY: D. H. Wilkey Jr.

January 14, 1987

Specifications for the Construction of Area I, Waller Park, City of Roswell, Georgia identified as Project # CD-82-08A dated December, 1986. Bidders are notified that above Specifications and accompanying Drawings are modified as set forth below. All other provisions of the Specifications, Drawings and other Contract Documents previously issued remain unchanged.

ITEMS:

1. On Drawing L5 at "Typical Roadway Section" and at "Asphalt Paving", change to:
 - 5" Base Course
 - 1-1/2" Type "B" Bituminious Binder Course
 - 1" Type "E" Wearing Course
2. On Drawing L5 at "Handicapped Drop Curb & Gutter":
 - (a) Change 1'-6" base dimensions to 2'-0".
 - (b) Change 7" thickness to 6".
 - (c) Add dimension of 5-1/2 inches from top of curb to low point of handicapped ramp at face of curb.

January 14, 1987

Specifications for the Construction of Area II, Waller Park, City of Roswell, Georgia identified as Project # CD-82-08A dated December, 1986. Bidders are notified that above Specifications and accompanying Drawings are modified as set forth below. All other provisions of the Specifications, Drawings and other Contract Documents previously issued remain unchanged.

ITEMS:

1. On Drawing L4 at "Typical Roadway Section" change to:
 - 5" Base Course
 - 1-1/2" Type "B" Bituminious Binder Course
 - 1" Type "E" Wearing Course
2. On Drawing L5 at "Handicapped Drop Curb & Gutter":
 - (a) Change 1'-6" base dimensions to 2'-0".
 - (b) Change 7" thickness to 6".
 - (c) Add dimension of 5-1/2 inches from top of curb to low point of handicapped ramp at face of curb.

